

NTISUB/C/127-002

February 1977

Monthly Energy Review



**Federal Energy
Administration**

**National Energy
Information Center**

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The cooperation of other government agencies and private establishments which provide much of the data appearing in this publication is gratefully acknowledged.

This periodical is available on a subscription basis from the following:

Subscriptions
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

For addresses inside the United States, the cost is \$36 per year (12 issues). For addresses outside the United States, the cost is \$50 per year. Domestic priority mailing is available at a cost of \$54 per year.

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Feature Articles appearing in previous issues:

Energy Consumption – March 1975

Nuclear Power – April 1975

The Price of Crude Oil – June 1975

U.S. Coal Resources and Reserves – July 1975

Propane, A National Energy Resource – September 1975

Short-Term Energy Supply and Demand Forecasting at FEA – October 1975

Curtailments of Natural Gas Service – January 1976

Home Heating Conservation Alternatives and the Solar Collector Industry – March 1976

Trends in United States Petroleum Imports – September 1976

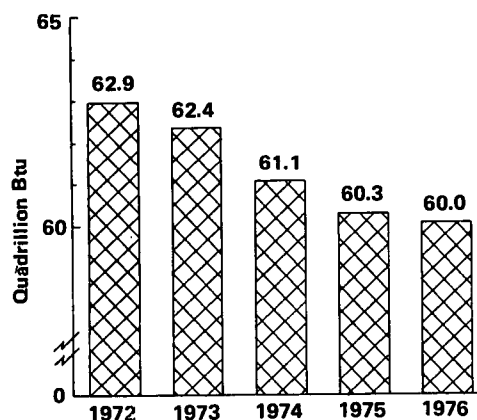
Crude Oil Entitlements Program – January 1977

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The United States produced 60.0 quadrillion Btu of energy (the equivalent of 28.3 million barrels per day of crude oil) during 1976, down 0.4 percent from the level for 1975. This drop was considerably less than the 1.7-percent average annual production decline between 1973 and 1975 (see Figure 1). Average daily crude oil production fell 2.8 percent, compared with 4.7 percent per year during the 1973 to 1975 period. Natural gas output declined 1.3 percent in 1976 versus an average rate of decline of 5.6 percent for 1973 to 1975. Coal production, on the other hand, increased 2.5 percent in 1976, and nuclear electric power production grew 10.7 percent. Estimated hydroelectric power generation dropped 4.3 percent.

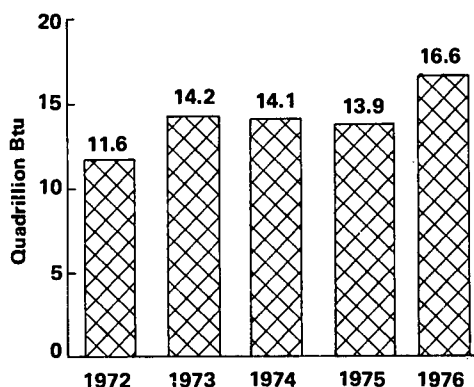
Figure 1. Domestic Energy Production



U.S. imports of fossil fuels during 1976 set a record high of 16.6 quadrillion Btu (or 7.8 million barrels per day of crude oil equivalent), an increase of 19.5 percent from the 1975 level (see Figure 2). Imports of crude oil were 28.8 percent higher in 1976, refined petroleum products, 4.5 percent higher, and natural gas, 1.8 percent higher. The rise in imports was necessary to meet the increase in energy demand that resulted from the general improvement in the economy and the unusually cold weather during the final quarter of the year.

Domestic consumption of energy during the first 11 months of 1976 was 66.8 quadrillion Btu (the equivalent of 34.4 million barrels per day of crude oil), 4.3 percent greater than consumption during the similar period of 1975. With the additional use of fuel oil and electricity for space heating during the last month of the year (combined demand for distillate and residual fuel oil was 19.8 percent above December 1975

Figure 2. U.S. Imports of Fossil Fuels



demand and electricity production was 8.9 percent greater), the consumption total for 1976 will probably approach the 1973 record level of 74.6 quadrillion Btu. The following percent changes in energy consumption occurred between the January to November periods of 1976 and 1975: petroleum products, +6.2; coal, +5.7; natural gas, +0.9; hydroelectric power, -3.0; nuclear electric power, +9.0.

Abnormally cold weather dominated the eastern half of the Nation during December for the third consecutive month. Distillate oil heating degree-days in the Middle and South Atlantic States were 17 percent above normal; in New England, 14 percent above normal; in the Midwest, 21 percent above normal; and in the South Central States, 30 percent above normal. The additional space heating requirements resulted in a 1 million-barrel-per-day drawdown of distillate fuel oil stocks during December and a record high distillate demand level of 4.5 million barrels per day. Year-end stocks were 20 million barrels (10 percent) below the inventory level at the end of 1975. Residual fuel oil stocks were down about 3 million barrels (4 percent). Crude oil stocks, however, ended the year up 13 million barrels (5 percent) from the levels for a year earlier. Inventories of natural gas were severely depleted in December because of the cold weather. Net withdrawals of gas from underground storage were nearly 50 percent greater than during December 1975, and the amount of available gas in storage at the end of 1976 was 13 percent below the amount in storage at the end of 1975.

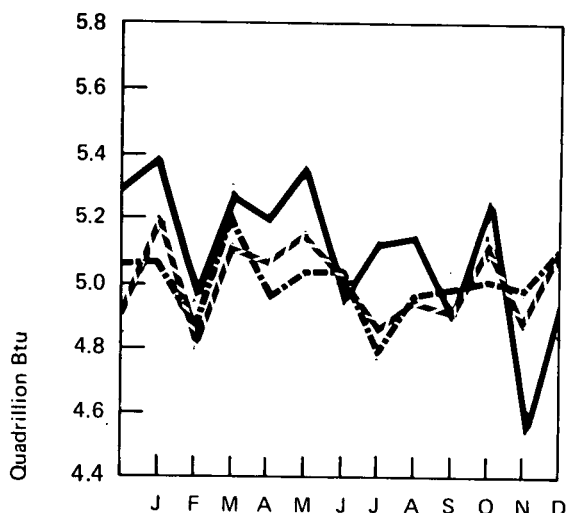
Retail gasoline prices declined seasonally for the second month in a row during December. The average selling price of regular

gasoline at full service stations was 59.9 cents per gallon, down 0.1 cent from the average price for November. The upper tier crude oil price stabilized in November at \$11.62 per barrel, the lower tier price increased 2 cents to \$5.17 per barrel, and the composite crude oil price rose 16 cents to \$8.62 per barrel. Stripper oil prices declined 5 cents to an average of \$13.30 per barrel.

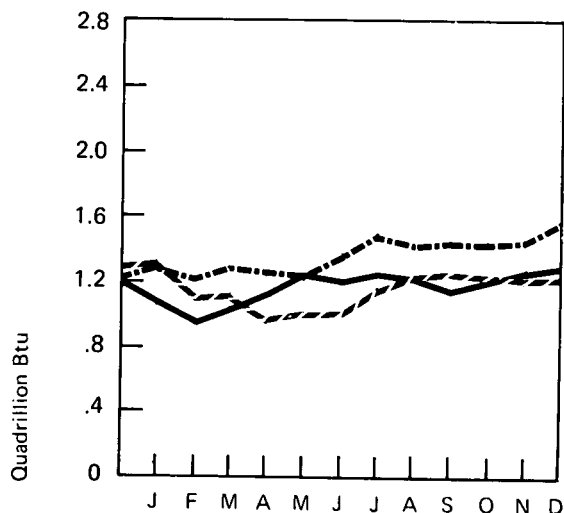
Domestic oil and gas drilling activity continued the postembargo uptrend during 1976. Well completions during the year totaled 39,763, an increase of 6.8 percent over the 1975 level. Gas well completions were up 19.5 percent, posting an all-time high for the fourth straight year. Oil well completions were 3.8 percent higher.

World production of crude oil achieved another new high in November of 60.51 million barrels per day. This was the third consecutive record-breaking month. The Organization of Petroleum Exporting Countries produced 33.19 million barrels during the month, 60 percent of which came from the Arab member nations.

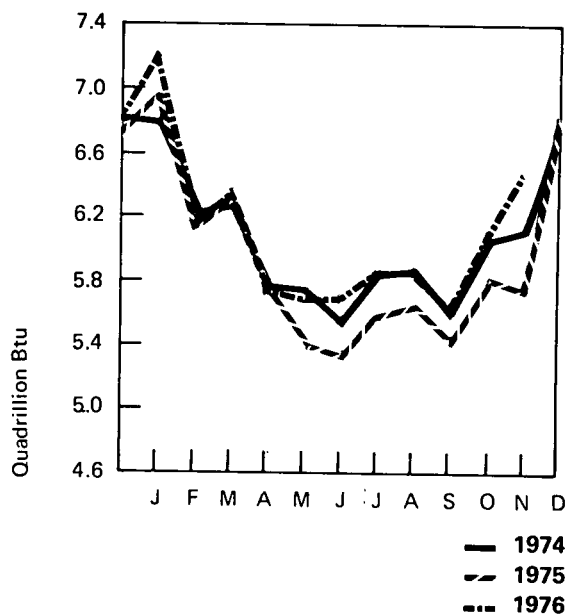
Domestic Production of Energy



Imports of Fossil Fuels



Domestic Consumption of Energy



		Domestic Production of Energy*	Imports of Fossil Fuels**	Domestic Consumption of Energy***
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Quadrillion (10¹⁵) Btu

1972	TOTAL	62.937	11.563	71.895
1973	TOTAL	62.373	14.519	74.551
1974	January	5.393	1.072	6.796
	February	4.979	0.945	6.205
	March	5.294	1.053	R6.263
	April	5.198	1.142	5.759
	May	5.374	1.266	R5.753
	June	4.945	1.197	5.535
	July	5.141	1.266	R5.868
	August	5.157	1.237	5.900
	September	5.000	1.138	R5.595
	October	5.265	1.210	6.066
	November	4.543	1.284	R6.129
	December	4.850	1.305	6.733
	TOTAL	61.138	14.114	72.604
1975	January	5.213	1.330	6.956
	February	R4.806	1.093	6.109
	March	5.131	1.128	R6.297
	April	5.074	0.970	R5.711
	May	5.163	1.023	R5.387
	June	5.013	1.028	5.342
	July	4.862	1.169	R5.582
	August	R4.955	1.213	5.655
	September	4.909	1.273	R5.415
	October	5.133	1.226	R5.823
	November	4.933	1.200	R5.766
	December	R5.109	1.219	6.819
	TOTAL	R60.299	13.870	R70.864
1976	January	R5.071	1.296	R7.216
	February	4.850	1.210	R6.163
	March	R5.211	1.301	R6.390
	April	R4.954	1.245	5.738
	May	R5.051	1.232	5.667
	June	5.052	1.391	R5.698
	July	4.790	1.507	R5.877
	August	R4.968	1.416	R5.858
	September	R4.966	1.466	R5.613
	October	R5.021	R1.445	R6.103
	November	R†4.984	†1.484	††6.481
	December	†5.109	†1.581	NA
	TOTAL	60.028	16.576	66.805 (11 months)

*See Explanatory Note 1.

**See Explanatory Note 2.

***See Explanatory Note 3.

†Preliminary data.

††Partially estimated.

R=Revised data.

NA=Not available.

Part 2 Crude Oil and Refined Petroleum Products

Crude Oil and Refined Petroleum Products

The preliminary estimate of crude oil production in December 1976 was 8.09 million barrels per day, slightly below the estimated average for the year of 8.13 million barrels per day. This preliminary 1976 estimate reflects a 2.8-percent decline from the 1975 average and compares with production declines of 4.7 percent recorded for the previous 2 years.

Crude oil imports for the year averaged 5.27 million barrels per day, 28.4 percent above the import level for 1975. Product imports were 2.00 million barrels per day, 4.2 percent above the level for the previous year. Total petroleum imports, at 7.27 million barrels per day, were 20.7 percent above the 1975 level. Total imports for the month of December were 8.21 million barrels per day, an increase of 31.8 percent over the December 1975 total.

Domestic demand for petroleum products averaged 17.33 million barrels per day in 1976, 6.4 percent greater than demand in 1975. December demand was a record 19.74 million barrels per day, 9.8 percent above the December 1975 level. This increase was the result of much colder weather and the improvement in the economy. (The December 1976 index of industrial production was 6.8 percent higher than in December 1975, and distillate oil heating degree-days were 24 percent greater than during December 1975.) Demand for distillate fuel oil, the petroleum product demand which is most affected by the weather, was 4.50 million barrels per day in December, up 19.0 percent from the demand level in December 1975. Imports of distillate during the month, averaging 261,000 barrels per day, were more than twice those of December 1975. Distillate stocks at the end of the month had declined to 189 million barrels, 20 million barrels below the December 1975 level.

Distillate Oil Heating Degree-Days

Frigid masses of arctic air, pushed far south by altered patterns in the upper air currents, continued to bring severe cold to the eastern and central parts of the country during December and the first part of January.

Distillate oil heating degree-days for December were 17 percent above normal and 24 percent above the total for December 1975. For the first 3 weeks of January 1977, the number of degree-days was 32 percent greater than normal and 15 percent greater than for the same period in 1976.

New England accumulated 14 percent more degree-days than normal during December; the Middle Atlantic and Southeastern States both registered 17 percent more than normal; the Midwest count was 21 percent above normal; and the South Central States had 30 percent above normal. The Mountain and West Coast States, however, continued to enjoy warmer than usual weather, with distillate heating oil requirements 1 percent and 5 percent below normal, respectively.

During the period July through December 1976, distillate oil heating degree-days for the continental States were 22 percent above normal and 35 percent above the level for the corresponding period of 1975.

Natural Gas Liquids

Domestic demand for natural gas liquids during October 1976 was 4.8 percent above demand during October 1975; and for the first 10 months of 1976, was 15.9 percent above demand for the same 10 months of 1975.

Production of natural gas liquids in October was down 2.2 percent from the October 1975 level. Average production for the first 10 months of 1976, however, was up 0.2 percent from the average for the corresponding months of 1975.

Imports of natural gas liquids in October were 2.4 percent higher than the import level a year earlier; and for the first 10 months of 1976 were 2.2 percent greater than the import level for the same period of 1975.

Total stocks of natural gas liquids during October were drawn down an average of 111,000 barrels per day to 144 million barrels, a level 3.7 percent above stocks for October 1975.

Crude Oil

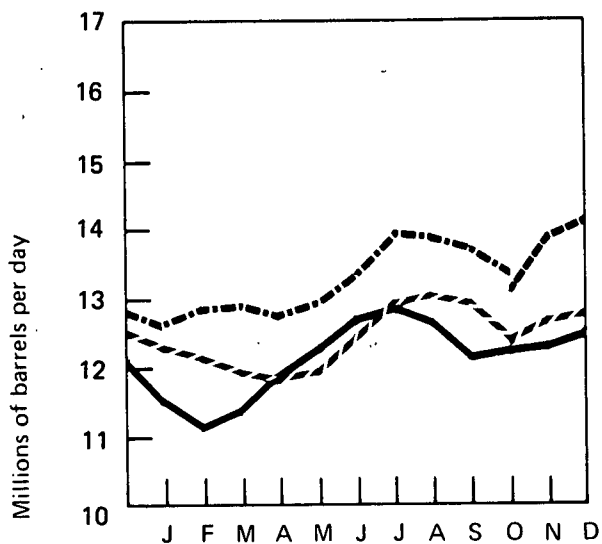
		Crude Input to Refineries		Domestic Production		Imports		Stocks	
		Thousands of barrels per day						Thousands of barrels	
		BOM	API	BOM	API	BOM	API	BOM	API
1972	AVERAGE	11,696		9,467		2,215		*232,803	
1973	AVERAGE	12,431		9,208		3,244		*229,504	
1974	January	11,491		8,934		2,382		233,035	
	February	11,102		9,142		2,248		240,723	
	March	11,355		8,965		2,462		244,665	
	April	11,823		8,954		3,267		256,385	
	May	12,333		8,911		3,908		269,455	
	June	12,697		8,780		3,925		268,765	
	July	12,811		8,780		4,091		268,686	
	August	12,644		8,699		3,924		264,840	
	September	12,124		8,443		3,797		266,726	
	October	12,286		8,611		3,810		269,437	
	November	12,332		8,569		3,958		271,144	
	December	12,519		8,527		3,869		265,020	
	AVERAGE	12,133		8,774		3,477			
1975	January	12,297		8,439		4,029		270,462	
	February	12,135		8,575		3,828		276,755	
	March	11,905		8,476		3,656		279,989	
	April	11,803		8,440		3,378		284,990	
	May	11,983		8,371		3,486		276,110	
	June	12,417		8,409		3,905		276,132	
	July	12,915		8,327		4,193		264,157	
	August	13,046		8,237		4,581		256,616	
	September	12,945		8,266		4,689		259,446	
	October	12,365		8,310		4,389		269,584	
	November	12,689		8,271		4,623		270,950	
	December	12,779		8,239		4,476		271,354	
	AVERAGE	12,442		8,362		4,105			
1976	January	12,560		8,211		4,595		289,296	
	February	12,834		8,196		4,208		277,414	
	March	12,877		8,175		4,738		283,112	
	April	12,727		8,080		4,790		286,628	
	May	12,920		8,168		4,669		283,982	
	June	13,351		8,144		5,621		281,715	
	July	13,901		8,104		5,792		282,559	
	August	13,888		8,075		5,556		277,272	
	September	13,716		8,185		5,875		284,357	
	October	13,319	13,099	8,049	8,083	5,699	5,580	297,683	292,537
	November		13,888		8,101		5,847		291,903
	December		14,187		8,090		5,823		284,038
	AVERAGE**		13,349		8,131		5,271		

*Total as of December 31.

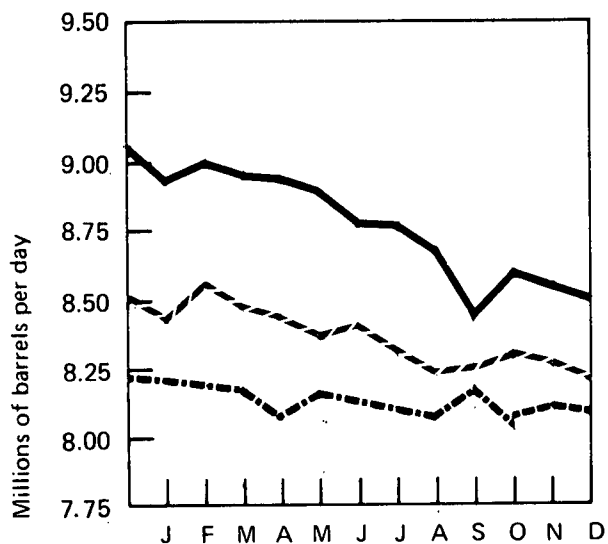
**1976 average is based on Bureau of Mines data for January through October and American Petroleum Institute for November and December.

Sources: Bureau of Mines (BOM) and American Petroleum Institute (API).

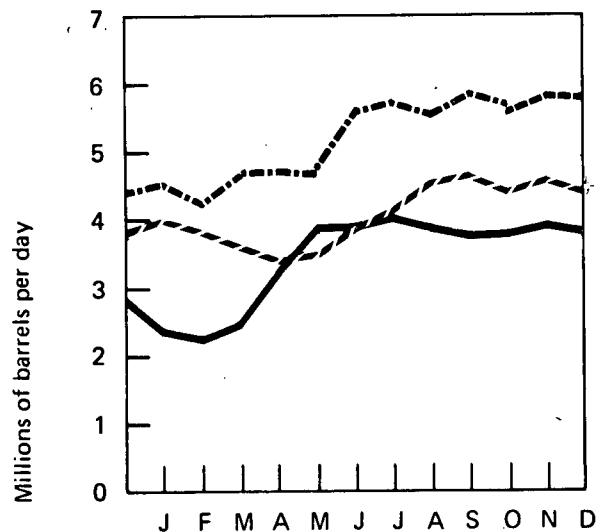
Crude Input to Refineries



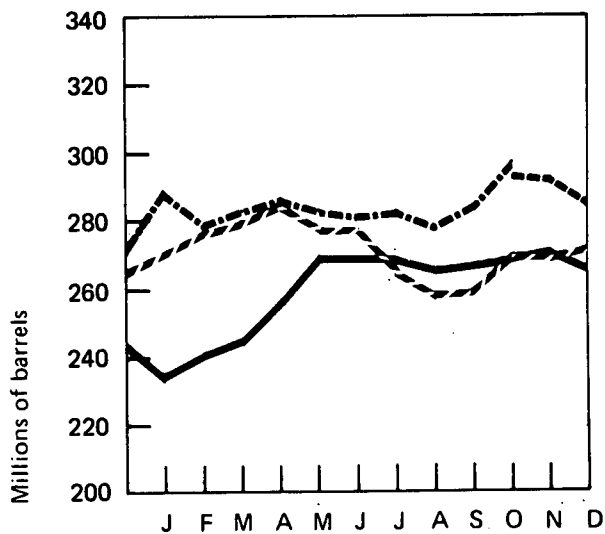
Domestic Production



Imports



Stocks



— 1974 BOM
 - - 1975 BOM
 . . 1976 BOM
 - . 1976 API

Total Refined Petroleum Products

Total Petroleum Imports

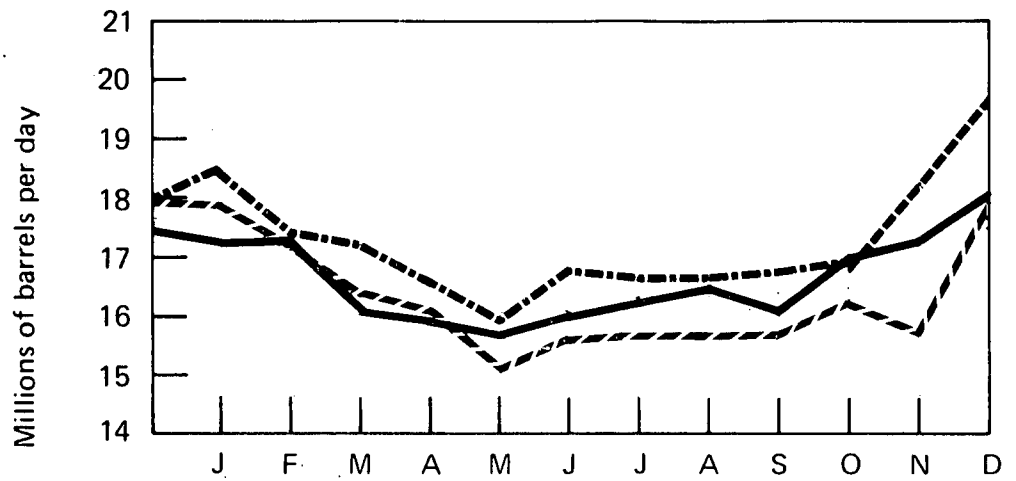
		Domestic Demand	Imports*				
		Thousands of barrels per day				Thousands of barrels per day	
		BOM	API	BOM	API	BOM	API
1972	AVERAGE	16,367		2,525		4,741	
1973	AVERAGE	17,308		3,012		6,256	
1974	January	17,286		2,989		5,371	
	February	17,366		2,968		5,216	
	March	16,104		2,812		5,274	
	April	15,929		2,713		5,980	
	May	15,726		2,586		6,494	
	June	16,117		2,435		6,360	
	July	16,349		2,445		6,536	
	August	16,550		2,438		6,362	
	September	16,024		2,255		6,052	
	October	17,050		2,366		6,176	
	November	17,351		2,840		6,798	
	December	18,013		2,798		6,667	
	AVERAGE	16,653		2,635		6,112	
1975	January	17,983		2,811		6,840	
	February	17,248		2,348		6,176	
	March	16,316		2,074		5,730	
	April	16,041		1,655		5,033	
	May	15,118		1,690		5,176	
	June	15,611		1,502		5,407	
	July	15,762		1,789		5,982	
	August	15,767		1,681		6,262	
	September	15,769		2,116		6,805	
	October	16,344		1,907		6,296	
	November	15,721		1,739		6,362	
	December	17,987		1,751		6,227	
	AVERAGE	16,291		1,920		6,025	
1976	January	18,599		2,070		6,665	
	February	17,429		2,423		6,631	
	March	17,299		1,946		6,684	
	April	16,672		1,805		6,595	
	May	15,977		1,654		6,323	
	June	16,836		1,858		7,479	
	July	16,613		2,098		7,890	
	August	16,642		1,826		7,382	
	September	16,825		2,038		7,913	
	October	17,052	16,802	1,809	1,786	7,508	7,366
	November		18,238		2,122		7,969
	December		19,742		2,386		8,209
	AVERAGE**		17,328		2,001		7,272

*See Definitions.

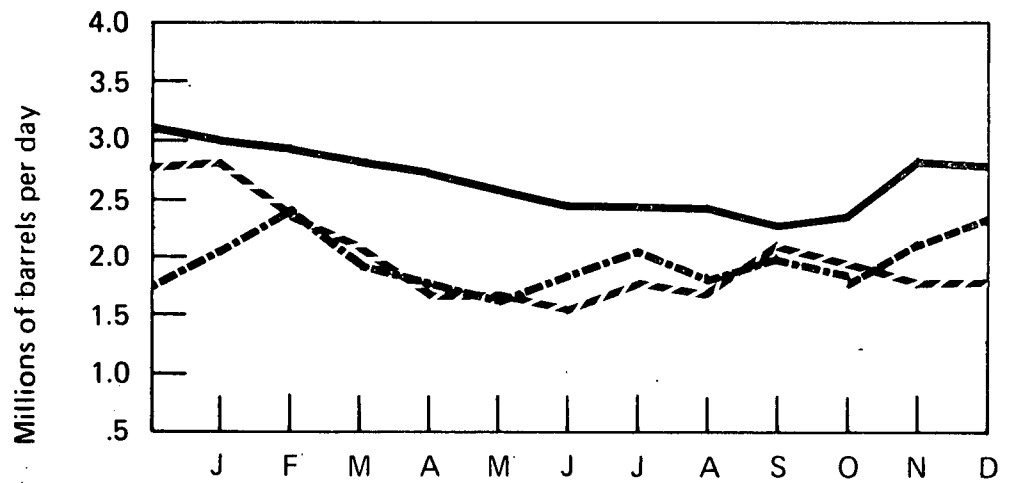
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Sources: Bureau of Mines (BOM) and American Petroleum Institute (API).

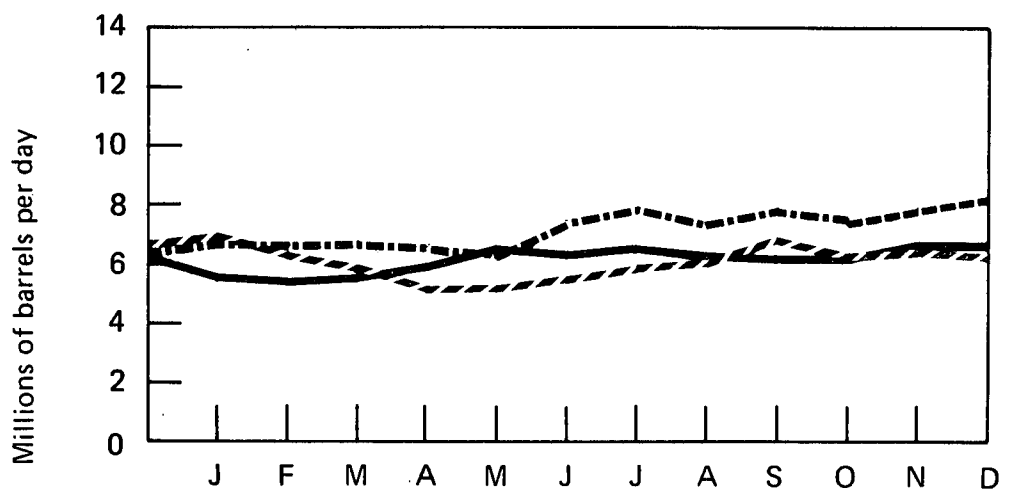
Total Refined Product Domestic Demand



Refined Product Imports



Total Petroleum Imports



— 1974 BOM
 - - 1975 BOM
 ... 1976 BOM
 - . - 1976 API

Direct and Indirect* U.S. Petroleum Imports from OPEC Countries

	Algeria	Indonesia	Iran	Libya	Nigeria	Saudi Arabia	United Arab Emirates	Venezuela	Other OPEC**	Total OPEC	Arab Members of OPEC
Thousands of barrels per day											
1973											
Direct	134.2	212.7	222.7	164.3	458.9	487.3	70.6	1,124.7	106.5	2,981.9	914.4
Indirect	17.0	25.0	211.0	144.0	149.0	253.0	13.0	509.0	88.0	1,409.0	463.0
Total	151.2	237.7	433.7	308.3	607.9	740.3	83.6	1,633.7	194.5	4,390.9	1,377.4
1974											
Direct	190.2	300.1	468.8	4.4	697.6	460.6	70.5	979.3	88.3	3,259.8	748.5
Indirect	16.9	40.8	262.2	35.9	214.6	214.6	17.3	478.5	128.7	1,409.5	357.9
Total	207.1	340.9	731.0	40.3	912.2	675.2	87.8	1,457.8	217.0	4,669.3	1,106.4
1975											
Direct											
January	280.1	293.9	394.1	18.7	882.3	847.6	46.9	1,016.1	130.6	3,910.3	1,267.0
February	239.4	318.7	297.1	82.2	846.1	794.5	105.9	763.2	135.5	3,582.6	1,260.3
March	295.8	286.4	180.6	174.7	835.5	637.4	113.2	722.2	168.7	3,414.5	1,281.8
April	225.9	351.1	345.9	124.9	618.7	427.6	70.4	823.9	61.6	3,050.0	853.1
May	345.4	358.7	225.5	211.4	643.5	335.2	124.7	801.3	159.1	3,204.8	1,041.2
June	346.8	480.9	231.5	182.9	619.1	500.5	77.3	711.3	130.7	3,281.0	1,131.1
July	346.6	463.4	217.4	248.0	714.9	587.7	107.2	679.0	115.6	3,479.8	1,301.7
August	268.8	472.4	203.4	407.0	804.1	748.5	259.5	521.8	90.5	3,776.0	1,718.0
September	284.1	410.0	276.7	456.6	817.0	730.7	216.1	624.4	145.1	3,960.7	1,701.7
October	235.6	402.2	310.7	236.3	772.5	961.1	93.3	514.9	109.2	3,634.8	1,575.4
November	295.7	396.9	472.9	275.6	801.7	933.9	69.1	584.7	72.2	3,902.7	1,585.0
December	211.0	390.6	186.2	354.6	784.9	1,074.7	114.2	622.1	130.1	3,868.4	1,777.7
Total Direct	281.5	388.4	280.4	232.0	761.5	715.0	116.7	697.6	116.1	3,589.2	1,381.3
Indirect	6.7	49.3	244.4	97.3	76.3	176.6	37.5	332.5	143.2	1,163.8	408.8
Total	288.2	437.7	524.8	329.3	837.8	891.6	154.2	1,030.1	259.3	4,753.0	1,790.1
1976											
Direct											
January	345.5	478.0	387.5	451.3	781.7	1,111.9	118.8	533.7	86.3	4,294.7	2,045.7
February	357.4	465.3	241.2	328.4	830.9	1,080.9	118.5	838.6	102.8	4,364.0	1,925.3
March	347.2	552.0	292.5	372.2	896.8	1,145.0	159.4	468.1	111.8	4,345.0	2,058.5
April	446.5	467.6	323.3	356.2	997.0	1,027.5	195.5	496.8	81.6	4,392.0	2,036.2
May	410.6	485.5	183.7	362.0	855.1	1,141.5	214.5	487.7	135.9	4,276.5	2,138.8
June	501.2	603.6	323.2	487.8	1,127.6	1,205.0	290.1	668.0	70.5	5,277.0	2,486.5
July	451.0	581.0	374.3	487.1	1,136.7	1,327.7	305.2	808.0	208.8	5,679.8	2,711.4
August	510.0	554.5	294.2	463.5	1,029.4	1,317.6	228.1	704.0	133.6	5,234.9	2,597.4
September	435.3	570.2	274.6	491.0	1,173.0	1,288.1	335.1	932.4	198.7	5,698.4	2,748.2
October	357.2	487.4	284.2	456.2	1,097.5	1,366.2	304.4	772.8	232.7	5,358.5	2,578.8
Total Direct	416.1	524.7	298.2	426.0	992.6	1,202.2	227.2	669.4	136.7	4,893.3	2,334.5
Indirect	16.0	55.0	198.0	83.0	77.0	106.0	56.0	293.0	161.0	1,045.0	406.0
Total (10 months)	432.1	579.0	496.2	509.0	1,069.6	1,308.2	283.2	962.4	298.7	5,938.3	2,740.5

*Indirect imports refer to U.S. imports of petroleum products, primarily from Caribbean and European areas, that have been refined from crude oil produced in other areas. U.S. imports of these products have been prorated to each OPEC country of origin based on the share of total crude oil supply in the Caribbean and European areas which was imported from each OPEC country. Some indirect import data are estimated.

**Includes Ecuador, Gabon, Iraq, Kuwait, and Qatar.

Source: Bureau of Mines and FEA.

Direct U.S. Petroleum Imports from Major Non-OPEC Sources

	Bahamas	Canada	Netherlands Antilles	Puerto Rico	Trinidad and Tobago	Virgin Islands	Other	Total
Thousands of barrels per day								
1973	170.8	1,312.9	573.6	99.3	250.6	329.2	537.8	3,274.2
1974	159.3	1,067.6	509.6	90.4	241.2	391.7	392.6	2,852.4
1975								
January	216.1	949.1	549.4	99.0	232.9	563.5	319.5	2,929.5
February	213.9	854.5	315.2	148.8	255.1	490.3	315.7	2,593.5
March	162.6	746.9	279.5	139.0	185.7	506.4	295.7	2,315.8
April	168.9	704.3	237.7	73.1	171.8	353.3	273.9	1,983.0
May	122.3	574.2	242.9	77.9	237.1	413.4	304.2	1,971.7
June	130.0	872.7	261.6	75.1	204.5	352.6	229.6	2,126.1
July	178.3	889.1	368.3	104.9	281.1	320.8	358.7	2,501.2
August	135.8	887.9	333.1	72.9	289.4	399.1	364.9	2,483.1
September	143.6	918.0	428.6	66.9	283.2	389.7	614.3	2,844.3
October	135.8	946.3	357.8	105.8	222.2	336.3	557.6	2,661.8
November	88.8	893.1	280.0	60.6	265.5	353.0	518.8	2,459.8
December	119.5	907.3	238.0	50.9	262.5	405.9	375.0	2,359.1
Total	152.0	845.2	323.6	89.7	240.9	406.5	377.5	2,435.4
1976								
January	134.1	681.7	291.7	71.0	343.2	468.4	380.2	2,370.3
February	127.6	644.9	262.4	122.2	326.3	462.3	321.7	2,267.4
March	90.4	590.2	328.7	114.0	315.6	424.5	475.5	2,338.9
April	131.9	578.4	274.9	68.5	291.9	341.2	516.5	2,203.3
May	95.2	614.9	214.1	70.6	257.5	388.5	405.7	2,046.5
June	104.2	653.3	190.4	54.3	319.3	427.5	453.0	2,202.0
July	112.8	581.7	259.1	77.9	279.2	386.5	513.4	2,210.6
August	98.5	580.9	268.7	81.5	163.6	437.2	516.6	2,147.0
September	143.1	564.8	273.3	104.1	182.6	408.5	537.9	2,214.3
October	78.3	562.0	239.0	92.2	215.2	460.5	502.0	2,149.2
Total (10 months)	111.4	605.1	260.4	85.5	269.1	420.5	462.7	2,214.7

Source: Bureau of Mines.

Motor Gasoline

		Domestic Demand		Production*		Imports		Stocks*	
		Thousands of barrels per day						Thousands of barrels	
		BOM	API	BOM	API	BOM	API	BOM	API
1972	AVERAGE	6,376		6,281		68		**212,770	
1973	AVERAGE	6,674		6,527		134		**209,395	
1974	January	5,804		5,900		163		217,463	
	February	6,100		5,969		184		219,058	
	March	6,162		5,982		225		220,307	
	April	6,457		6,311		260		223,752	
	May	6,745		6,329		250		218,670	
	June	6,919		6,663		211		217,381	
	July	6,959		6,793		212		218,838	
	August	7,061		6,815		253		218,951	
	September	6,388		6,453		202		227,031	
	October	6,712		6,336		171		220,748	
	November	6,547		6,292		174		218,385	
	December	6,558		6,419		141		224,719	
		AVERAGE	6,537		6,358		204		
1975	January	6,206		6,509		262		242,285	
	February	6,096		6,276		171		251,915	
	March	6,326		6,070		150		248,685	
	April	6,718		6,046		133		232,556	
	May	6,871		6,126		142		213,947	
	June	7,076		6,669		177		207,114	
	July	7,041		7,003		209		212,454	
	August	7,008		6,872		232		215,480	
	September	6,729		6,822		269		226,447	
	October	6,778		6,409		207		221,493	
	November	6,389		6,602		139		232,091	
	December	6,808		6,786		119		234,925	
		AVERAGE	6,674		6,518		184		
1976	January	6,398		6,483		92		240,464	
	February	6,263		6,472		84		248,854	
	March	6,890		6,455		123		239,049	
	April	7,159		6,562		99		223,965	
	May	6,853		6,774		112		225,037	
	June	7,482		7,303		188		225,365	
	July	7,354		7,218		190		229,405	
	August	7,168		7,149		141		230,578	
	September	7,079		6,878		171		229,751	
	October	6,966	6,798	6,712	6,596	138	134	229,016	222,928
	November		6,994		6,896		160		226,078
	December		7,038		7,104		134		232,173
		AVERAGE***		6,972		6,835		136	

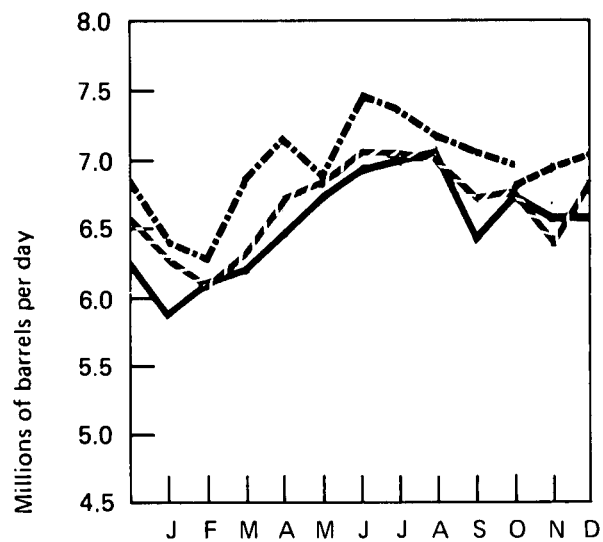
*See Definitions.

**Total as of December 31.

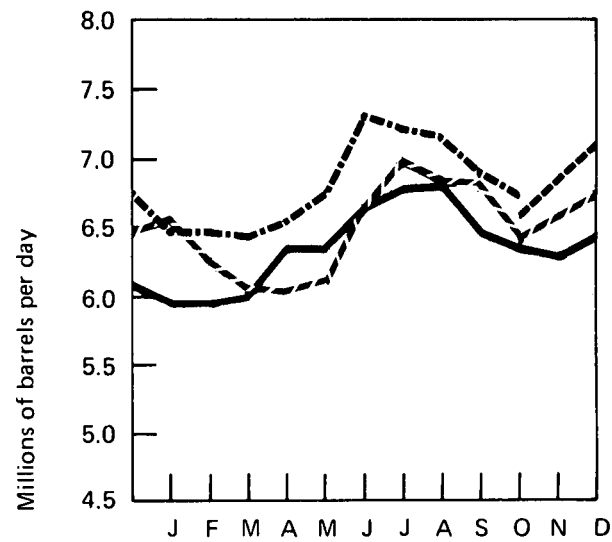
***1976 average is based on Bureau of Mines data for January through October and American Petroleum Institute data for November and December.

Sources: Bureau of Mines (BOM) and American Petroleum Institute (API).

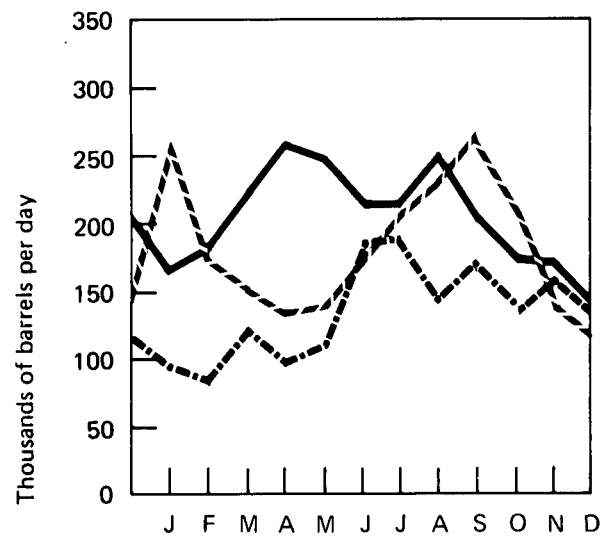
Domestic Demand



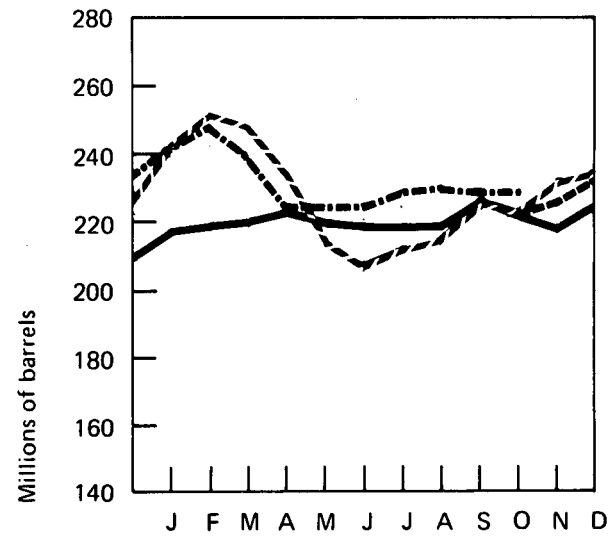
Production



Imports



Stocks



— 1974 BOM
 - - 1975 BOM
 ... 1976 BOM
 - . - 1976 API

Jet Fuel

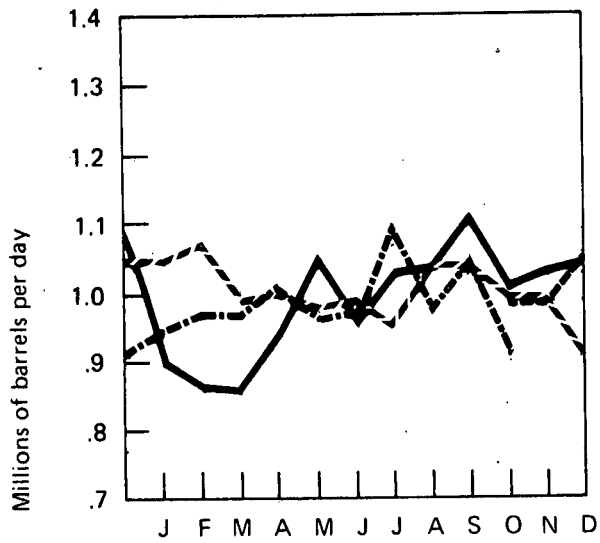
		Domestic Demand		Production		Imports		Stocks	
		Thousands of barrels per day						Thousands of barrels	
		BOM	API	BOM	API	BOM	API	BOM	API
1972	AVERAGE	1,045		847		194		*25,493	
1973	AVERAGE	1,059		859		212		*28,544	
1974	January	895		800		136		29,732	
	February	860		783		75		29,617	
	March	956		832		139		29,996	
	April	941		868		132		31,725	
	May	1,053		868		205		32,324	
	June	952		810		141		32,200	
	July	1,028		802		214		31,671	
	August	1,031		805		206		30,989	
	September	1,109		867		217		30,186	
	October	1,011		868		161		30,564	
	November	1,032		863		140		29,616	
	December	1,043		861		178		29,776	
	AVERAGE	993		836		163			
1975	January	1,041		831		229		30,321	
	February	1,075		835		200		29,133	
	March	982		896		130		30,456	
	April	1,006		864		138		30,263	
	May	977		861		133		30,719	
	June	989		839		106		29,337	
	July	954		883		88		29,798	
	August	1,046		958		132		31,103	
	September	1,040		907		140		31,291	
	October	997		863		106		30,410	
	November	999		864		89		28,977	
	December	911		849		109		30,380	
	AVERAGE	1,001		871		133			
1976	January	948		889		69		30,618	
	February	966		918		72		31,180	
	March	965		927		86		32,619	
	April	1,010		927		108		33,332	
	May	960		899		106		34,664	
	June	972		879		68		33,879	
	July	1,099		933		130		32,732	
	August	965		942		38		33,121	
	September	1,048		990		63		33,204	
	October	911	982	890	898	50	94	34,032	31,877
	November		985		896		118		32,756
	December		1,047		920		95		31,406
	AVERAGE**		990		917		84		

*Total as of December 31.

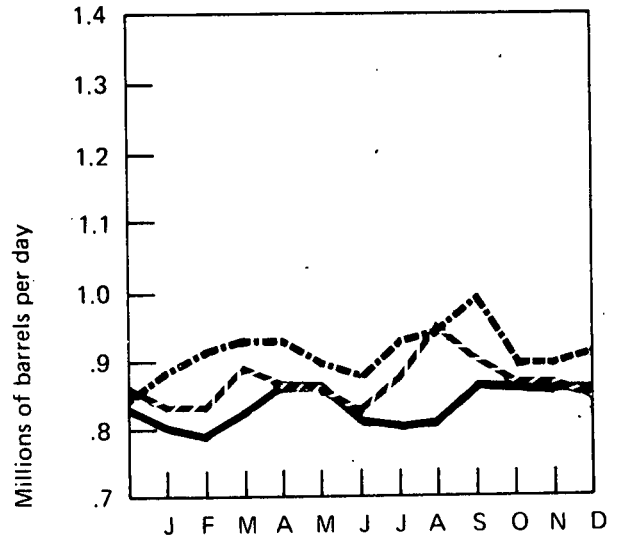
**1976 average is based on Bureau of Mines data for January through October and American Petroleum Institute data for November and December.

Sources: Bureau of Mines (BOM) and American Petroleum Institute (API).

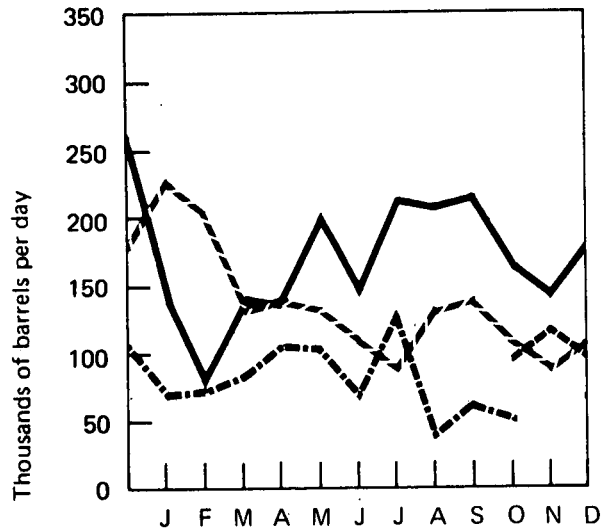
Domestic Demand



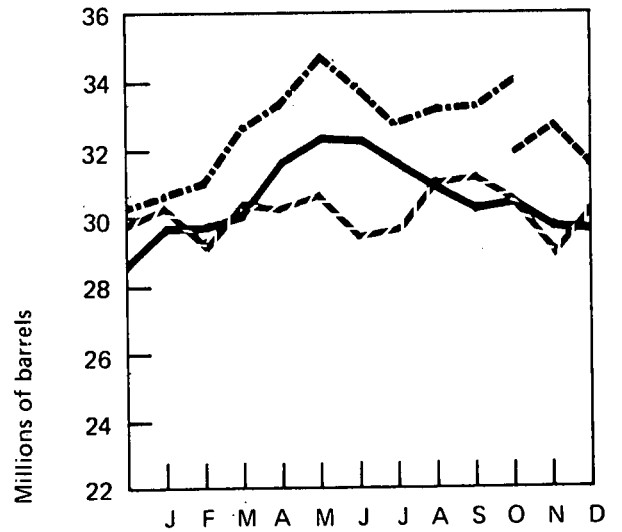
Production



Imports



Stocks



— 1974 BOM
 - - 1975 BOM
 - - 1976 BOM
 - . 1976 API

Distillate Fuel Oil

		Domestic Demand		Production*		Imports		Stocks*	
				Thousands of barrels per day				Thousands of barrels	
		BOM	API	BOM	API	BOM	API	BOM	API
1972	AVERAGE	2,913		2,629		181		**154,284	
1973	AVERAGE	3,092		2,820		392		**196,421	
1974	January	3,835		2,880		464		181,179	
	February	3,849		2,399		306		149,125	
	March	3,164		2,226		287		128,822	
	April	2,852		2,522		220		125,553	
	May	2,450		2,704		268		141,806	
	June	2,377		2,783		220		160,645	
	July	2,309		2,792		221		182,458	
	August	2,309		2,705		125		198,673	
	September	2,385		2,552		152		208,269	
	October	2,887		2,700		237		209,908	
	November	3,157		2,801		454		212,875	
	December	3,853		2,924		515		223,717	
	AVERAGE	2,948		2,668		289			
1975	January	3,953		2,852		324		199,715	
	February	3,967		2,679		302		176,696	
	March	3,293		2,531		256		161,111	
	April	3,094		2,486		110		146,214	
	May	2,382		2,431		136		152,027	
	June	2,266		2,574		68		163,306	
	July	2,112		2,589		106		181,472	
	August	2,173		2,592		92		197,323	
	September	2,163		2,812		129		220,732	
	October	2,675		2,744		103		226,113	
	November	2,544		2,767		96		235,749	
	December	3,778		2,783		124		208,787	
	AVERAGE	2,849		2,653		153			
1976	January	4,298		2,734		164		165,428	
	February	3,687		2,961		207		150,439	
	March	3,336		2,793		151		138,306	
	April	2,788		2,655		96		137,249	
	May	2,519		2,738		97		147,057	
	June	2,436		2,885		151		165,064	
	July	2,255		2,959		126		190,861	
	August	2,237		2,982		131		217,930	
	September	2,618		2,947		147		232,230	
	October	3,029	2,906	2,995	2,865	141	87	235,599	232,689
	November		3,664		3,094		182		221,065
	December		4,497		3,194		261		188,726
	AVERAGE***		3,113		2,911		154		

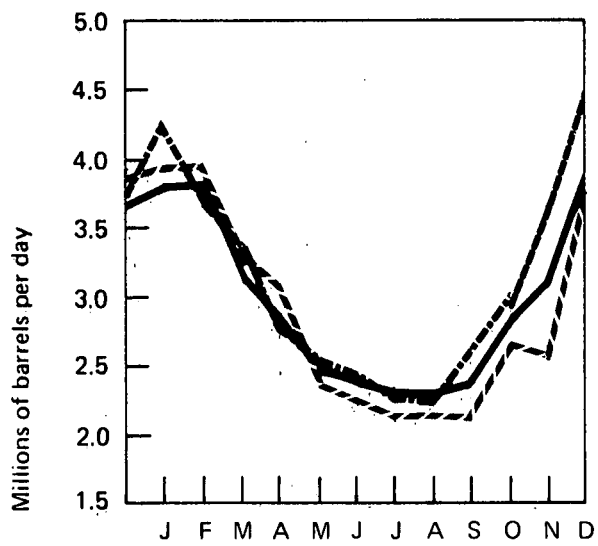
*See Definitions.

**Total as of December 31.

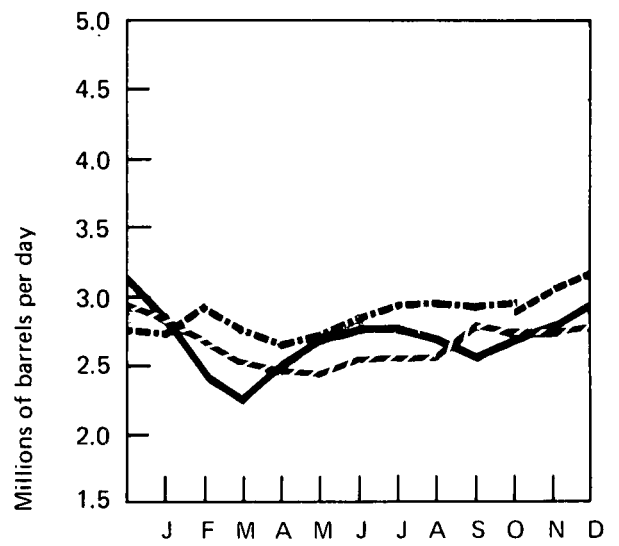
***1976 average is based on Bureau of Mines data for January through October and American Petroleum Institute data for November and December.

Sources: Bureau of Mines (BOM) and American Petroleum Institute (API).

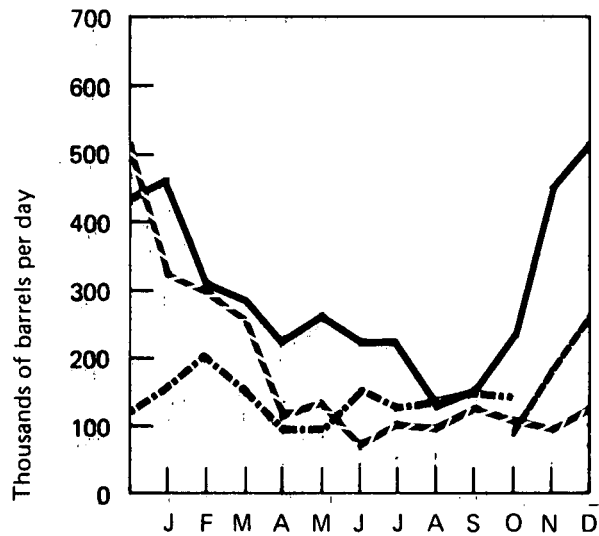
Domestic Demand



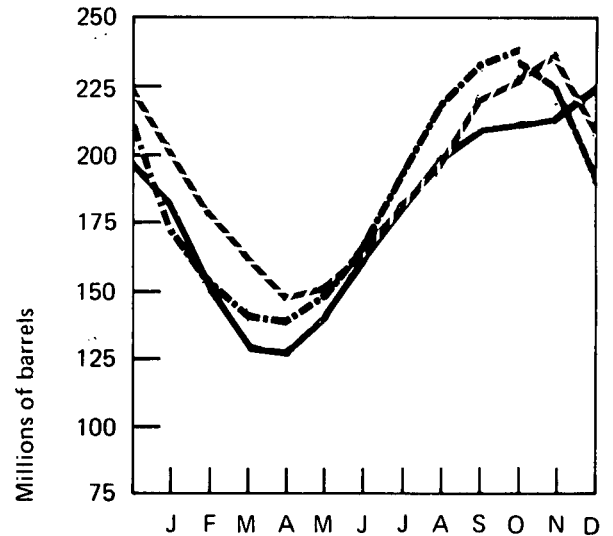
Production



Imports



Stocks



— 1974 BOM
 - - 1975 BOM
 - - - 1976 BOM
 - . - 1976 API

Distillate Oil Heating Degree-Days*

Petroleum Administration for Defense (PAD) Districts	DECEMBER (November 29 - January 2)			1976	Cumulative Since July 1	
	1976	1975**	Normal (1941-70)**		1975**	Normal (1941-70)**
PAD District I	1,150.9	941.4 (22.3)	989.3 (16.3)	2,223.3	1,610.6 (38.0)	1,815.7 (22.4)
New England Conn., Maine, Mass., N.H., R.I., Vt.	1,369.4	1,167.5 (17.3)	1,205.8 (13.6)	2,683.3	2,054.5 (30.6)	2,303.1 (16.5)
Middle Atlantic Del., Md., N.J., N.Y., Pa.	1,303.2	1,043.1 (24.9)	1,109.4 (17.5)	2,512.4	1,789.7 (40.4)	2,034.6 (23.5)
Lower Atlantic Fla., Ga., N.C., S.C., Va., W.Va.	611.4	503.5 (21.4)	520.8 (17.4)	1,154.8	794.9 (45.3)	872.3 (32.4)
PAD District II	1,568.9	1,210.0 (29.7)	1,299.5 (20.7)	3,142.9	2,306.2 (36.3)	2,512.4 (25.1)
Ill., Ind., Iowa, Kans., Ky., Mich., Minn., Mo., Nebr., N.Dak., Ohio, Okla., S.Dak., Tenn., Wisc.						
PAD District III	740.8	577.5 (28.3)	571.8 (29.6)	1,384.3	939.6 (47.3)	931.7 (48.6)
Ala., Ark., La., Miss., N.Mex., Tex.						
PAD District IV	1,239.3	1,194.0 (3.8)	1,249.4 (-0.8)	2,608.2	2,639.3 (-1.2)	2,673.7 (-2.4)
Colo., Idaho, Mont., Utah, Wyo.						
PAD District V	709.9	708.5 (0.2)	747.8 (-5.1)	1,437.5	1,598.1 (-10.0)	1,691.7 (-15.0)
Ariz., Calif., Nev., Oreg., Wash.						
U.S. TOTAL	1,208.3	976.6 (23.7)	1,030.7 (17.2)	2,362.3	1,744.2 (35.4)	1,930.7 (22.4)

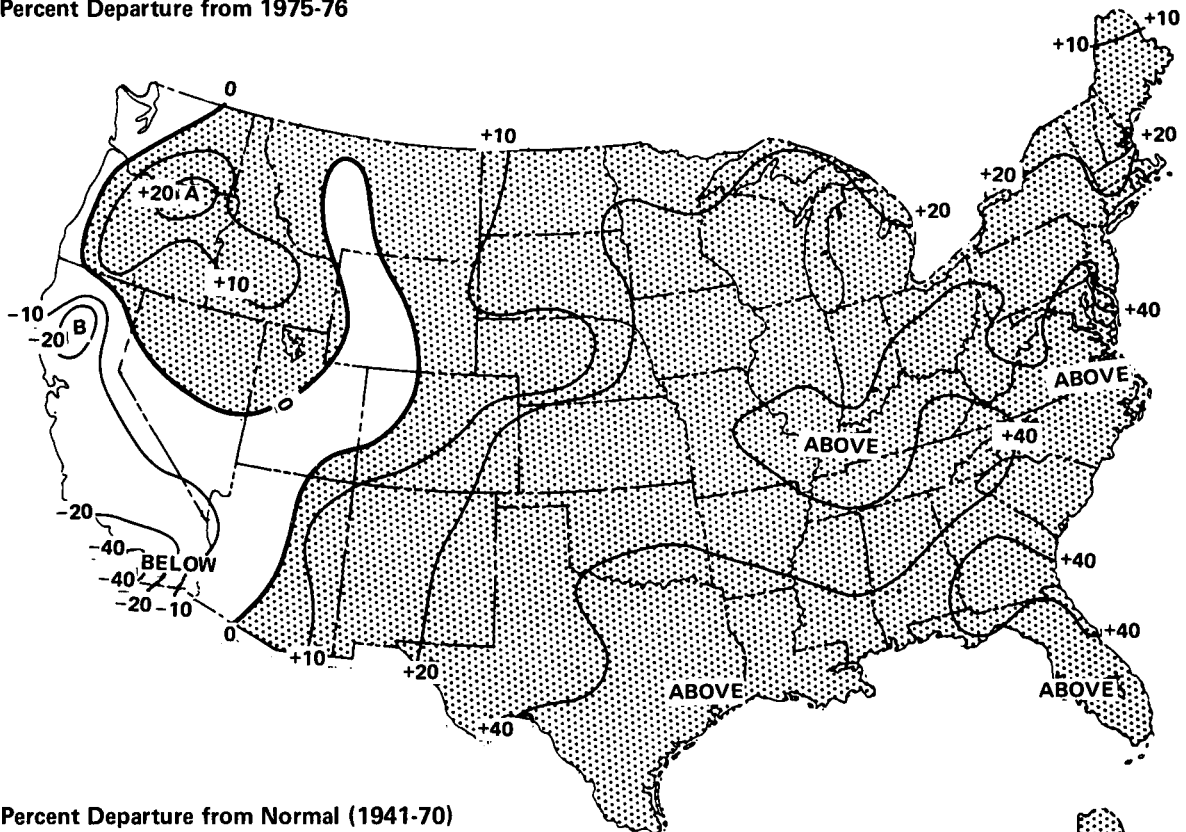
Petroleum Administration for Defense (PAD) Districts	JANUARY (January 3 - January 30)			1976-77	Cumulative Since July 1	
	1977	1976**	Normal (1941-70)**		1975-76**	Normal (1941-70)**
PAD District I	1,129.9	968.2 (16.7)	870.0 (29.9)	3,353.2	2,578.8 (30.0)	2,685.8 (24.9)
New England Conn., Maine, Mass., N.H., R.I., Vt.	1,252.7	1,184.0 (5.8)	1,070.2 (17.1)	3,936.0	3,238.4 (21.5)	3,373.3 (16.7)
Middle Atlantic Del., Md., N.J., N.Y., Pa.	1,273.4	1,079.7 (17.9)	978.2 (30.2)	3,785.8	2,869.3 (31.9)	3,012.8 (25.7)
Lower Atlantic Fla., Ga., N.C., S.C., Va., W.Va.	701.8	519.1 (35.2)	443.1 (58.4)	1,856.6	1,314.0 (41.3)	1,315.5 (41.1)
PAD District II	1,526.3	1,253.1 (21.8)	1,154.1 (32.3)	4,669.2	3,559.2 (31.2)	3,666.5 (27.3)
Ill., Ind., Iowa, Kans., Ky., Mich., Minn., Mo., Nebr., N.Dak., Ohio, Okla., S.Dak., Tenn., Wisc.						
PAD District III	751.8	563.9 (33.3)	519.8 (44.6)	2,136.1	1,503.5 (42.1)	1,451.5 (47.2)
Ala., Ark., La., Miss., N.Mex., Tex.						
PAD District IV	1,192.9	985.6 (21.0)	1,090.3 (9.4)	3,801.1	3,625.0 (4.9)	3,764.0 (1.0)
Colo., Idaho, Mont., Utah, Wyo.						
PAD District V	656.4	533.6 (23.0)	656.4 (-0.0)	2,093.9	2,131.6 (-1.8)	2,348.1 (-10.8)
Ariz., Calif., Nev., Oreg., Wash.						
U.S. TOTAL	1,182.7	994.4 (18.9)	909.9 (30.0)	3,545.0	2,738.6 (29.4)	2,840.6 (24.8)

*See Explanatory Note 4 for explanation of distillate oil heating degree-days.

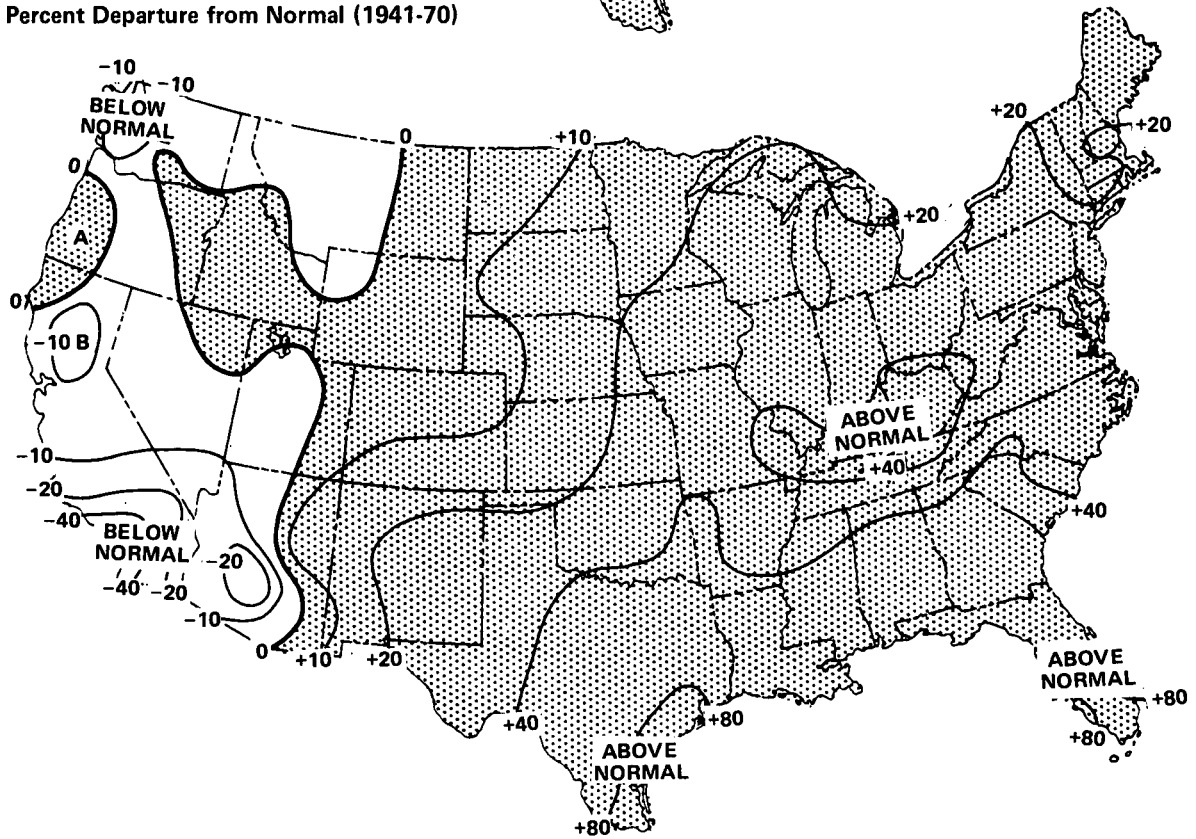
**Percentage change in parentheses.

Heating Degree-Days Accumulated from July 1, 1976 through January 30, 1977

Percent Departure from 1975-76



Percent Departure from Normal (1941-70)



Note: Above normal heating degree-days correspond to below normal temperatures.
Source: Department of Commerce—NOAA.

Residual Fuel Oil

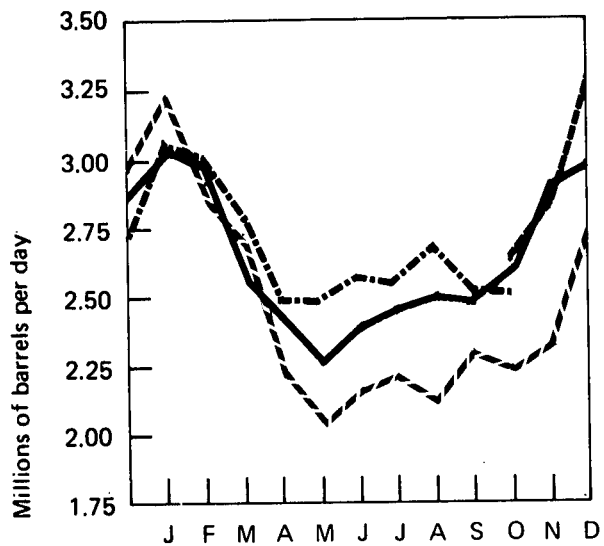
		Domestic Demand		Production		Imports		Stocks			
		Thousands of barrels per day								Thousands of barrels	
		BOM	API	BOM	API	BOM	API	BOM	API		
1972	AVERAGE	2,529		799		1,742		*55,216			
1973	AVERAGE	2,822		971		1,853		*53,480			
1974	January	3,035		1,072		1,733		46,548			
	February	2,991		1,029		1,904		45,004			
	March	2,556		912		1,713		47,222			
	April	2,437		985		1,593		51,339			
	May	2,260		995		1,362		54,356			
	June	2,405		1,026		1,500		57,891			
	July	2,473		1,056		1,474		59,787			
	August	2,529		1,067		1,520		60,988			
	September	2,475		1,032		1,421		60,251			
	October	2,611		1,099		1,465		58,679			
	November	2,935		1,229		1,753		60,363			
	December	2,983		1,335		1,630		74,939			
	AVERAGE	2,639		1,070		1,587					
1975	January	3,242		1,415		1,647		60,233			
	February	2,849		1,354		1,402		66,495			
	March	2,668		1,299		1,292		64,148			
	April	2,225		1,245		1,047		66,340			
	May	2,049		1,151		1,123		73,498			
	June	2,179		1,152		904		69,660			
	July	2,239		1,155		1,144		71,526			
	August	2,118		1,146		982		71,857			
	September	2,329		1,183		1,312		76,938			
	October	2,238		1,165		1,221		81,858			
	November	2,349		1,214		1,169		83,131			
	December	2,728		1,354		1,099		74,126			
	AVERAGE	2,433		1,235		1,194					
1976	January	3,069		1,415		1,406		66,592			
	February	3,007		1,394		1,703		68,859			
	March	2,779		1,311		1,342		65,132			
	April	2,496		1,283		1,258		66,458			
	May	2,479		1,257		1,134		65,147			
	June	2,565		1,241		1,240		64,272			
	July	2,555		1,266		1,460		69,812			
	August	2,678		1,321		1,307		68,490			
	September	2,519		1,330		1,442		76,436			
	October	2,511	2,644	1,351	1,260	1,234	1,347	79,117	68,150		
	November		2,842		1,498		1,473		68,755		
	December		3,299		1,706		1,667		71,305		
	AVERAGE**		2,733		1,365		1,388				

*Total as of December 31.

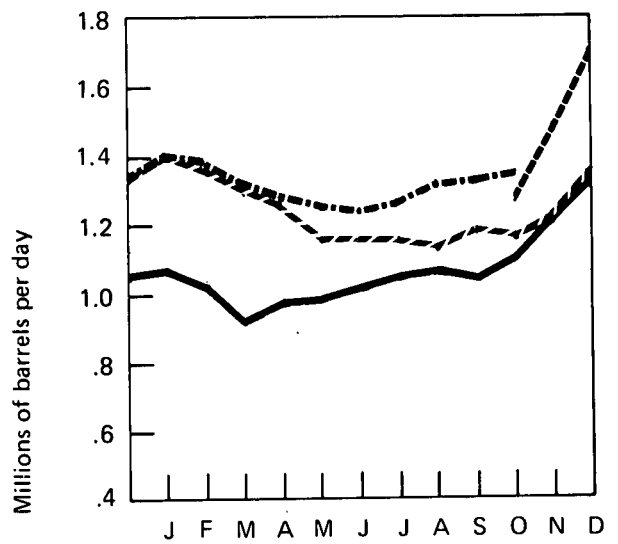
**1976 average is based on Bureau of Mines data for January through October and American Petroleum Institute data for November and December.

Sources: Bureau of Mines (BOM) and American Petroleum Institute (API).

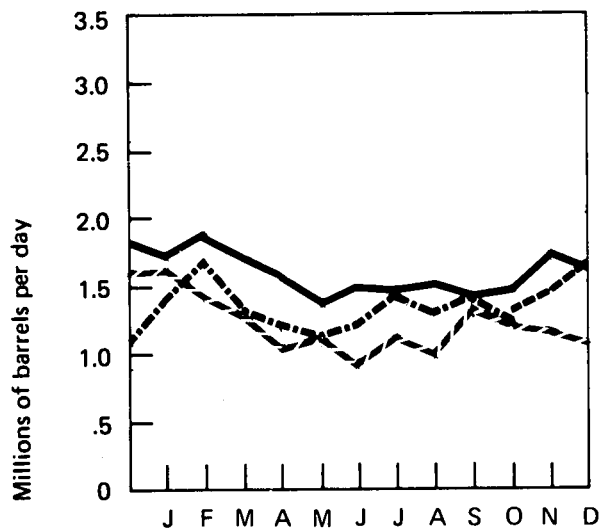
Domestic Demand



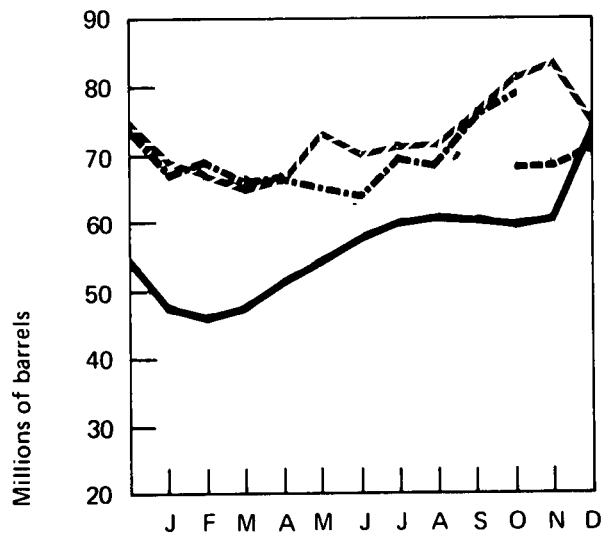
Production



Imports



Stocks



— 1974 BOM
 - - 1975 BOM
 . . . 1976 BOM
 - . - 1976 API

Natural Gas Liquids

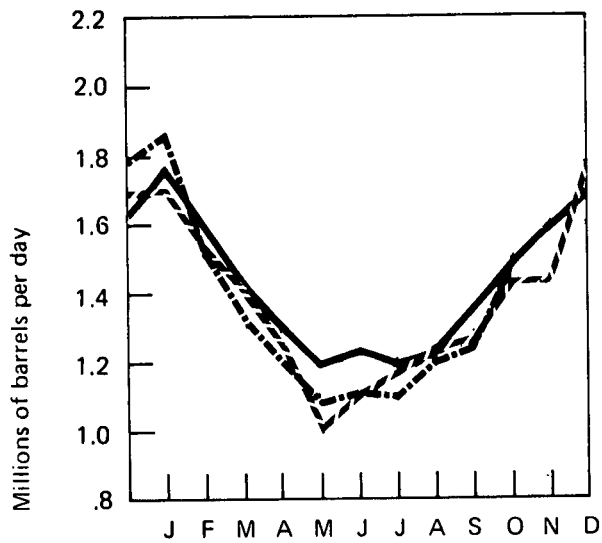
		Domestic Demand*	Production*		Used at Refineries*	Imports	Stocks*
			At processing plants	At refineries			Thousands of barrels
			Thousands of barrels per day				
1972	AVERAGE	1,420	1,744	365	826	174	**84,243
1973	AVERAGE	1,454	1,738	375	815	239	**98,940
1974	January	1,778	1,699	327	794	304	91,210
	February	1,593	1,728	337	777	294	90,145
	March	1,408	1,741	341	720	224	94,817
	April	1,321	1,696	353	690	215	101,352
	May	1,180	1,690	340	678	182	110,881
	June	1,242	1,684	368	718	199	117,915
	July	1,187	1,657	364	723	163	125,427
	August	1,221	1,676	361	742	163	131,675
	September	1,360	1,638	348	738	166	133,215
	October	1,493	1,686	330	788	200	130,557
	November	1,604	1,694	301	795	208	124,447
	December	1,692	1,670	286	796	230	114,295
	AVERAGE	1,422	1,688	338	746	212	
1975	January	1,708	1,630	307	756	257	105,400
	February	1,512	1,646	296	734	181	100,945
	March	1,404	1,658	280	731	178	99,168
	April	1,242	1,635	273	667	176	100,408
	May	1,002	1,607	299	628	97	112,737
	June	998	1,646	323	659	166	125,215
	July	1,191	1,621	336	701	173	131,359
	August	1,227	1,650	357	690	163	137,074
	September	1,278	1,577	326	703	209	140,278
	October	1,429	1,643	310	729	198	138,981
	November	1,444	1,635	309	759	196	135,976
	December	1,787	1,646	310	768	232	124,278
	AVERAGE	1,352	1,633	311	710	186	
1976	January	1,885	1,585	305	728	240	109,450
	February	1,518	1,640	316	793	270	106,647
	March	1,303	1,615	333	674	194	111,483
	April	1,201	1,616	349	716	171	116,788
	May	1,074	1,588	376	695	144	124,369
	June	1,110	1,606	356	718	163	132,359
	July	1,103	1,592	354	710	147	139,521
	August	1,213	1,596	362	695	160	144,352
	September	1,243	1,601	352	713	152	147,541
	October	1,497	1,601	309	709	203	144,108
	AVERAGE (10 months)	1,505	1,604	341	712	184	

*See Explanatory Note 5.

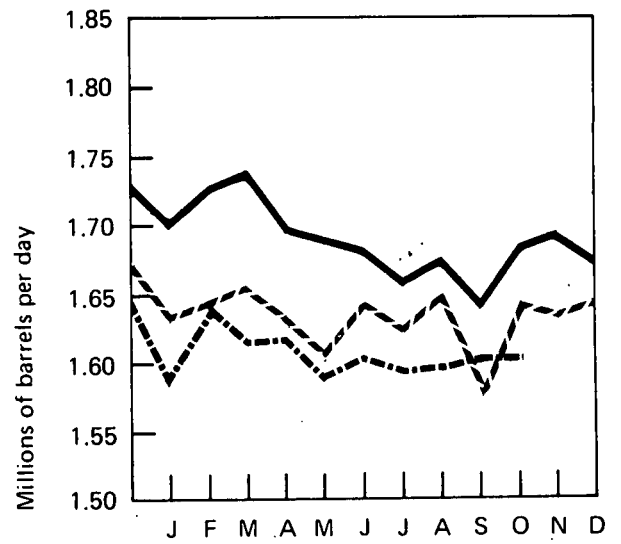
**Total as of December 31.

Source: Bureau of Mines.

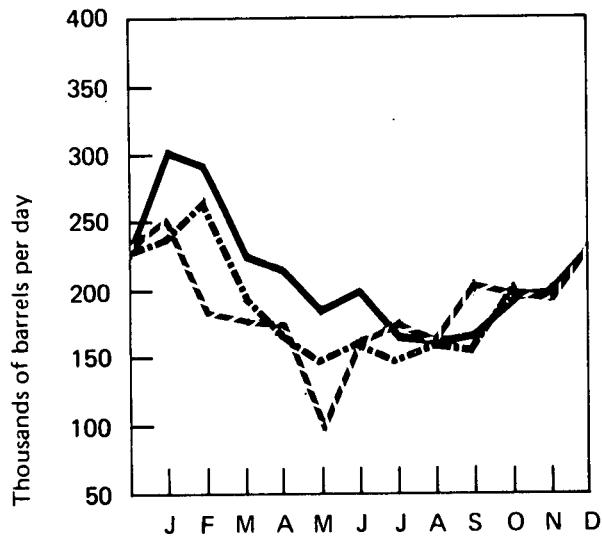
Domestic Demand



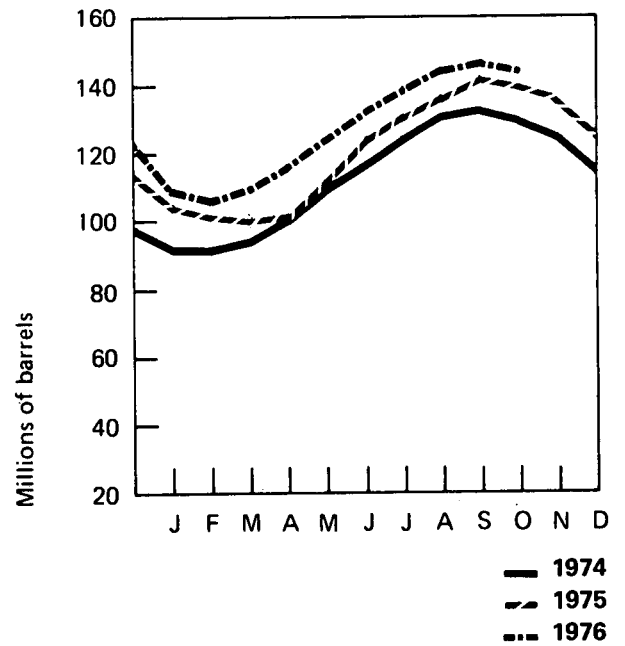
Production at Processing Plants



Imports



Stocks



— 1974
 - - 1975
 . . 1976

U.S. Petroleum Supply and Demand

	1976			
	Actual*			
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Thousands of barrels per day				
Supply				
Crude oil and lease condensate production	8,194	8,131	8,121	8,080
Natural gas plant liquids production	1,612	1,604	1,596	1,595
Other hydrocarbon supply	37	38	37	37
Crude oil imports	4,520	5,023	5,740	5,789
Refined products imports**	2,140	1,771	1,987	2,105
Total new supply	16,503	16,567	17,481	17,606
Processing gain	485	495	469	480
Stock change—all oils	-797	+363	+1,065	-374
Total net supply	17,785	16,699	16,885	18,460
Unaccounted for crude oil***	+204	+8	+42	+113
Demand				
Crude oil and refined products exports	192	204	220	214
Crude oil losses	14	14	15	14
Domestic demand for refined products†	17,783	16,489	16,692	18,345
Total demand	17,989	16,707	16,927	18,573

	1977			
	Forecast††			
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Thousands of barrels per day				
Supply				
Crude oil and lease condensate production	8,078	8,047	8,347	9,002
Natural gas plant liquids production	1,560	1,541	1,524	1,541
Other hydrocarbon supply	36	36	36	36
Crude oil imports	6,360	6,280	6,307	5,507
Refined products imports**	1,564	1,321	1,276	2,042
Total new supply	17,598	17,225	17,490	18,128
Processing gain	520	516	527	522
Stock change—all oils	-694	+565	+524	-395
Total net supply	18,812	17,176	17,493	19,045
Unaccounted for crude oil***	0	0	0	0
Demand				
Crude oil and refined products exports	230	205	198	195
Crude oil losses	13	13	13	13
Domestic demand for refined products†	18,569	16,958	17,282	18,837
Total demand	18,812	17,176	17,493	19,045

*Partially estimated.

**Includes plant condensate and unfinished oils.

***Balancing item resulting from statistical inconsistencies.

†Includes international bunkers.

††See Explanatory Note 6 for discussion of basic assumptions for forecast.

Sources: 1976: 1st, 2nd, and 3rd Quarters—BOM; 4th Quarter—BOM and API.

1977: FEA forecast.

Natural Gas

Marketed production of natural gas in December was estimated at 1.70 trillion cubic feet, 1.7 percent below production in December 1975. Total production for the year was estimated at 19.85 trillion cubic feet, down 1.3 percent from the 1975 total.

Estimated imports of natural gas in December were 88 billion cubic feet, 2.3 percent greater than the December 1975 level. Total imports in 1976 were estimated to be 1.8 percent above 1975 imports.

Estimated domestic consumption of natural gas in December was 2.17 trillion cubic feet, up 5.9 percent from the December 1975 level. Total consumption in 1976 was estimated to be 1.5 percent greater than consumption in 1975.

Domestic producer sales to major interstate pipeline companies in August were down 8.2 percent from the August 1975 level, and for the first 8 months of 1976, were 5.4 percent below the sales during the same period of 1975.

Net withdrawals of natural gas from underground storage reservoirs during the last 2 months of 1976 were nearly double the amount withdrawn during the same 2-month period of 1975. Inventory drawdowns during November and December totaled 779 billion cubic feet compared with only 404 billion cubic feet during November and December 1975. This large drawdown was attributed to the severe cold weather that dominated the eastern and midwestern areas of the country. The amount of working gas in storage at the end of December totaled 1.95 trillion cubic feet, 13.3 percent below the December 31, 1975, level.

Because of the early-winter storage depletions and the continued cold weather in January, curtailments of natural gas* in certain areas of the country have affected even high priority users (such as schools and small commercial establishments) that have no capability to burn alternate fuels. Some

industrial users have been curtailed indefinitely, resulting in numerous plant shutdowns and layoffs in the eastern half of the United States. FEA and the Federal Power Commission (FPC) have been closely monitoring the curtailments situation on a daily basis.

*In a report issued by FEA in November 1976, curtailments of natural gas to end users for the 1976-77 heating season (November to March) were projected to be 1.84 trillion cubic feet based on an assumption of normal winter weather.

Natural Gas

		Domestic Consumption*	Marketed Production*	Domestic Producer Sales to Major Interstate Pipelines	Imports
Billion cubic feet					
1972	TOTAL	22,102	22,532	12,429	1,019
1973	TOTAL	22,049	22,648	12,067	1,033
1974	January	2,230	1,928	1,033	86
	February	2,054	1,759	941	79
	March	2,003	1,886	1,027	85
	April	1,691	1,793	987	83
	May	1,608	1,846	981	80
	June	1,439	1,740	928	74
	July	1,514	1,818	947	74
	August	1,510	1,790	932	76
	September	1,537	1,755	870	70
	October	1,706	1,767	936	83
	November	1,827	1,729	921	82
	December	2,104	1,790	959	87
	TOTAL	21,223	21,601	11,462	959
1975	January	2,248	1,778	950	81
	February	1,939	1,640	867	75
	March	1,903	1,740	948	83
	April	1,575	1,677	906	82
	May	1,331	1,689	898	80
	June	1,257	1,634	859	76
	July	1,313	1,677	873	80
	August	1,369	1,677	882	75
	September	1,370	1,603	836	74
	October	1,544	1,646	877	80
	November	1,640	1,618	853	81
	December	2,049	1,730	903	86
	TOTAL	19,538	20,109	10,652	953
1976	January	2,297	1,745	894	83
	February	1,823	1,641	850	79
	March	1,822	1,709	894	85
	April	1,504	1,633	849	85
	May	1,434	1,668	860	83
	June	1,327	1,637	815	77
	July	1,350	1,671	822	74
	August	R1,327	1,631	810	76
	September	R1,290	R1,562	NA	***75
	October	R1,610	R**1,633	NA	***82
	November	R1,870	***1,620	NA	***83
	December	2,170	***1,700	NA	***88
	TOTAL	19,824	19,850	6,794 (8 months)	970

*See Explanatory Note 7.

**Preliminary data.

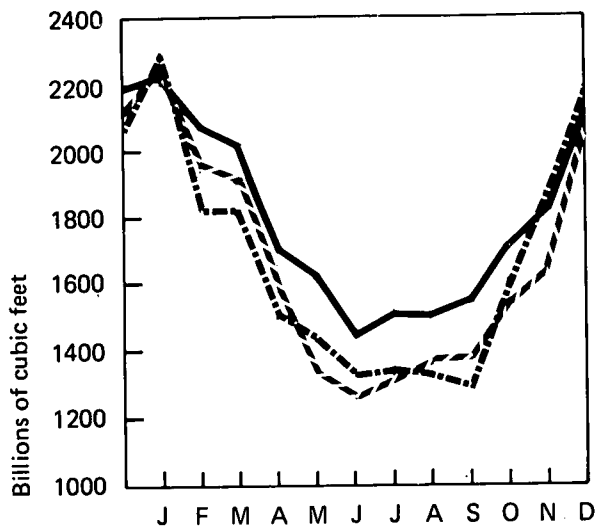
***Projected data.

R=Revised data. NA=Not available.

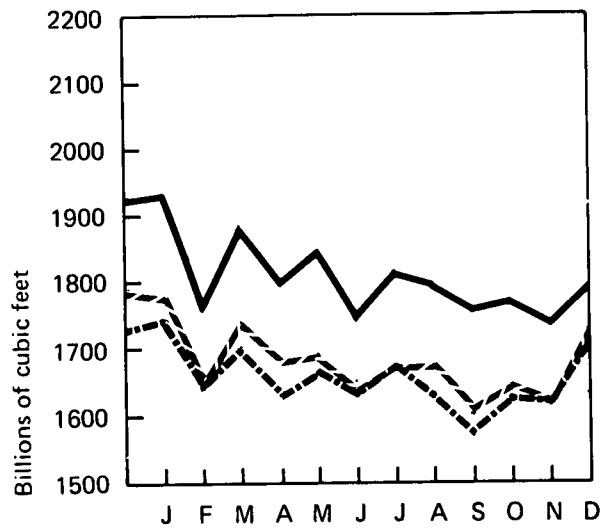
Note: All monthly Domestic Consumption data are estimated.

Sources: Consumption, Marketed Production, and Imports—Bureau of Mines; Domestic Producer Sales—Federal Power Commission.

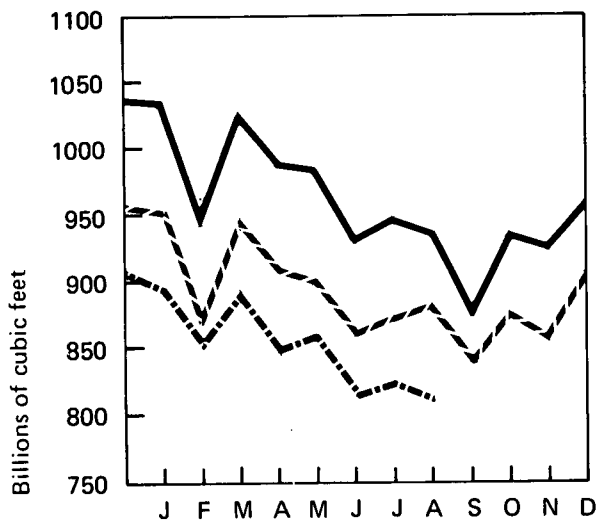
Domestic Consumption



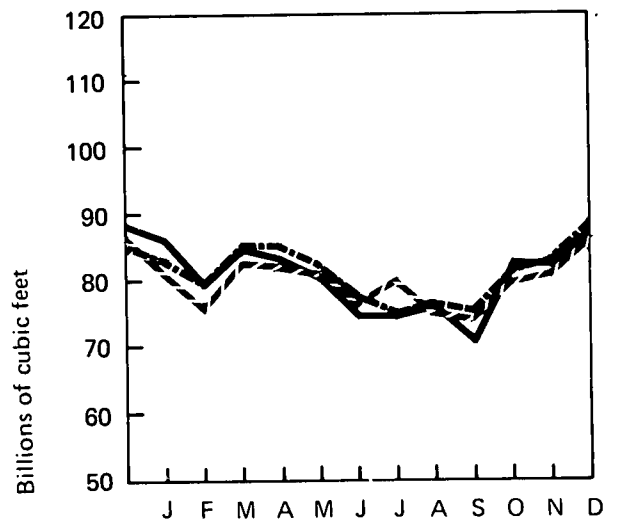
Marketed Production



Domestic Producer Sales to Major Interstate Pipelines



Imports



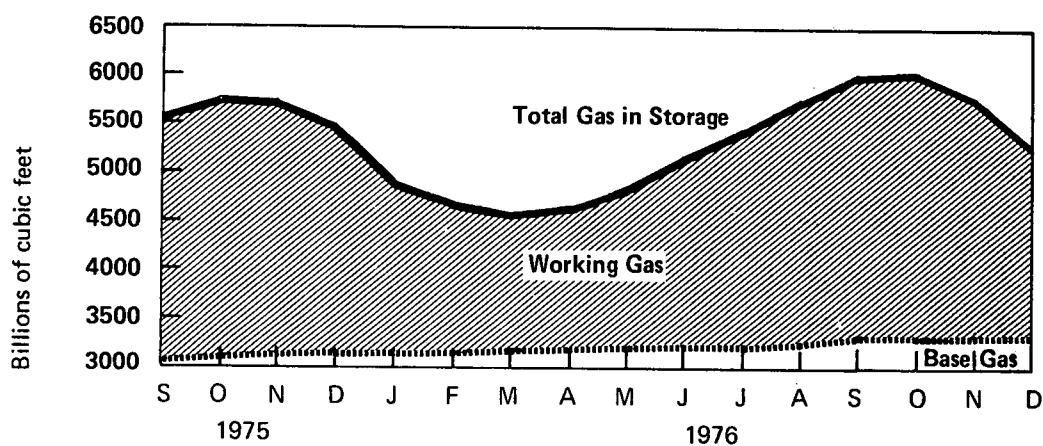
— 1974
 - - 1975
 ... 1976

Natural Gas (Continued)

Natural Gas in Underground Storage*

		Total Gas in Storage	Base Gas	Working Gas	Storage Injections	Storage Withdrawals	Net Storage Injections
Billion cubic feet							
1974	October**	5,445	3,042	2,403	***	***	***
1975	September	5,558	3,084	2,474	232	38	194
	October	5,770	3,128	2,642	185	51	134
	November	5,760	3,172	2,588	99	150	-51
	December	5,423	3,173	2,250	41	394	-353
1976	January	4,868	3,194	1,674	19	630	-611
	February	4,660	3,197	1,463	73	292	-219
	March	4,543	3,195	1,348	85	217	-132
	April	4,650	3,208	1,443	181	68	113
	May	4,878	3,214	1,664	248	23	225
	June	5,163	3,220	1,943	308	19	289
	July	5,476	3,244	2,232	318	19	299
	August	5,759	3,272	2,487	296	15	281
	September	6,021	3,317	2,704	262	20	242
	October	6,030	3,327	2,703	128	121	7
	November	5,779	3,330	2,449	41	298	-257
	December	5,284	3,334	1,950	23	545	-522

Gas in Storage



*See Explanatory Note 8.

**Data reported as of November 1, 1974.

***Between November 1, 1974, and August 31, 1975, a total of 1,658 billion cubic feet of gas was injected into storage and 1,686 billion cubic feet was withdrawn, for net storage injections of -28 billion cubic feet.

Sources: Federal Energy Administration and Federal Power Commission.

Coal

Production of bituminous coal and lignite in 1976 totaled 665 million tons. Although this is a record level, it is a modest increase of only 2.6 percent over the 648 million tons produced in 1975. Production in 1976 was impeded by a 4-week strike by the United Mine Workers in July and August.

Domestic consumption of bituminous coal and lignite during the first 10 months of 1976 was 485.6 million tons, an increase of 5.7 percent over the amount consumed during the first 10 months of 1975. Consumption by the electric utility sector totaled 366.8 million tons, a gain of 10.2 percent over the amount used during the same period in 1975. This increase in utility coal usage was due primarily to the shift to lower heat value western coal and the increase in coal-fired electricity generation in the Western and Gulf Coast States.

Coal exports were 54.8 million tons during the first 11 months of 1976, down 10.4 percent from the amount exported during the corresponding months of 1975. Exports to Japan, the largest of U.S. coal importers, were 24.5 percent lower during the period. The primary reason for this large decline is that Japan has been substituting imports of less expensive coal from Australia.

Total stocks of coal held by consumers on August 31, 1976, amounted to 109.5 million tons, with electric utilities accounting for 88.5 percent of the total. This represents an 84-day supply for electric utilities compared to a 1975 average figure of 76 days. Utilities have built up a relatively high level of coal inventories since the 1974 United Mine Workers' strike.

Bituminous and Lignite

		Domestic Consumption*	Production*	Exports	Stocks
		Thousands of short tons			
1972	TOTAL	516,776	595,386	55,997	**117,442
1973	TOTAL	556,022	591,738	52,903	**103,022
1974	January	50,046	53,712	2,813	97,836
	February	44,929	50,053	4,627	95,812
	March	45,858	51,278	3,179	101,568
	April	43,595	54,402	4,944	107,167
	May	44,951	57,662	6,032	112,882
	June	44,315	48,065	6,369	111,935
	July	48,605	49,392	5,307	106,160
	August	48,579	51,808	5,088	105,478
	September	43,844	52,686	4,893	109,173
	October	45,868	60,495	7,342	118,670
	November	44,598	33,702	6,744	109,192
	December	47,521	40,151	2,587	95,528
	TOTAL***	552,709	603,406	59,926	
1975	January	49,841	55,610	4,254	95,512
	February	45,699	51,135	4,470	97,028
	March	47,202	51,910	5,653	97,832
	April	43,537	56,330	6,159	102,663
	May	42,658	57,045	7,011	109,666
	June	44,777	55,730	6,269	114,857
	July	47,454	45,560	4,691	109,133
	August	49,190	51,160	5,859	108,522
	September	44,032	56,060	4,529	111,922
	October	44,929	60,030	4,647	120,344
	November	45,946	54,655	7,593	125,808
	December	51,036	53,213	4,534	127,115
	TOTAL***	556,301	648,438	65,669	
1976	January	52,919	51,495	3,697	119,149
	February	46,800	52,630	3,050	118,970
	March	48,607	60,050	3,979	123,441
	April	45,554	57,850	5,780	128,408
	May	45,675	56,605	5,667	134,621
	June	47,708	58,430	6,569	140,237
	July	R50,999	43,250	4,879	R129,606
	August	R51,647	53,440	4,223	R123,721
	September	†47,401	59,675	5,613	†130,962
	October	†48,302	57,445	5,871	†132,207
	November	NA	58,350	5,451	NA
	December	NA	55,780	NA	NA
	TOTAL	485,612	665,000	54,780	
		(10 months)	(12 months)	(11 months)	

*See Explanatory Note 9.

**Total as of December 31.

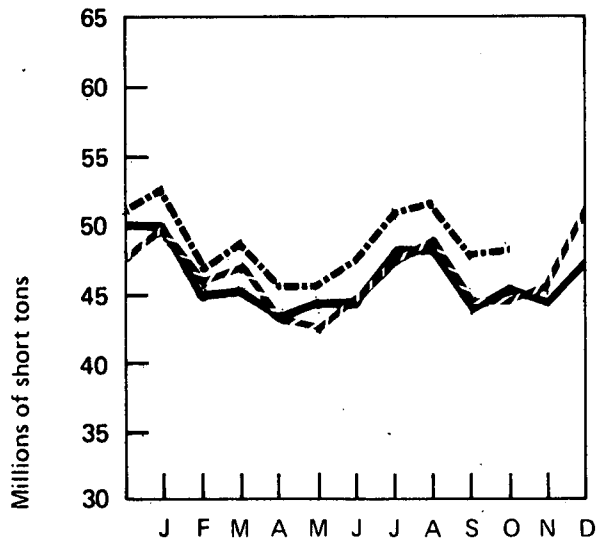
***Totals may not add due to rounding.

†FEA estimate based on data provided by Bureau of Mines and Federal Power Commission.

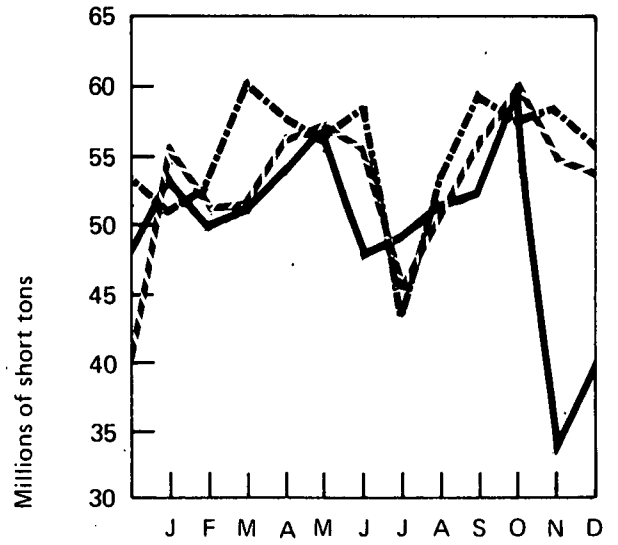
R=Revised data. NA=Not available.

Source: Bureau of Mines.

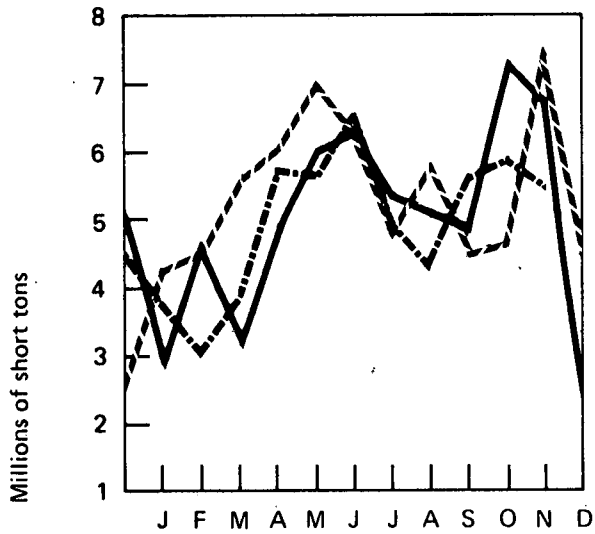
Domestic Consumption



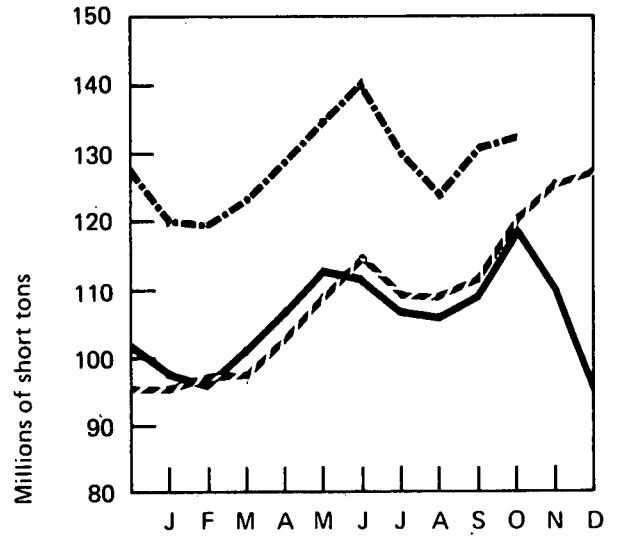
Production



Exports



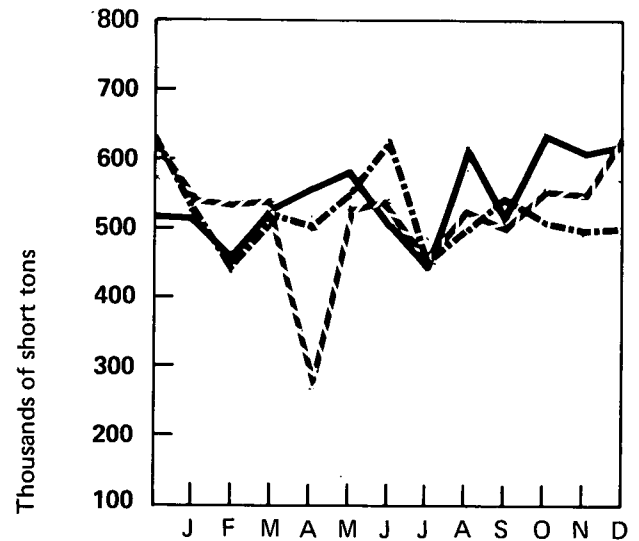
Stocks



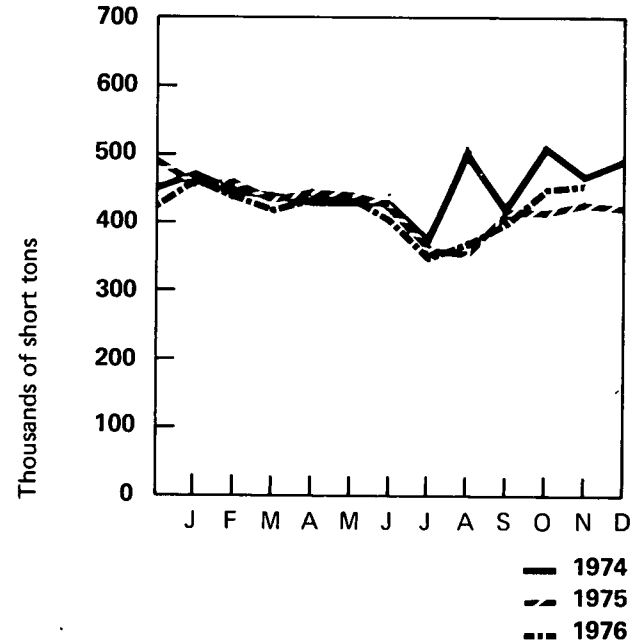
— 1974
 - - 1975
 ... 1976

Anthracite

Production



Apparent Domestic Consumption



		Production	Apparent Domestic Consumption
		Thousands of short tons	
1972	TOTAL	7,106	5,915
1973	TOTAL	6,830	5,671
1974	January	516	R477
	February	458	R445
	March	531	R441
	April	563	R432
	May	589	R433
	June	505	R437
	July	443	R369
	August	620	R516
	September	516	R417
	October	641	R518
	November	610	R467
	December	625	R496
	TOTAL	6,617	R5,448
1975	January	540	R459
	February	535	R465
	March	544	R435
	April	270	R450
	May	535	R445
	June	544	R430
	July	455	R360
	August	535	R356
	September	500	R425
	October	560	R420
	November	555	R435
	December	R630	R428
	TOTAL	R6,203	R5,108
1976	January	530	R460
	February	440	R430
	March	R530	R420
	April	R500	R435
	May	555	R440
	June	630	R400
	July	R450	R350
	August	R500	R375
	September	R550	R400
	October	R510	455
	November	R500	460
	December	505	NA
	TOTAL	6,200	4,625 (11 months)

R=Revised data.
NA=Not available.
Source: Bureau of Mines.

Electric Utilities

December 1976 net production of electricity by utilities is estimated at 184.5 billion kilowatt hours, 8.9 percent above the level for December 1975. Total net production during 1976 is estimated at 2.04 trillion kilowatt hours, 6.3 percent above the level for 1975.

Electric utilities consumed 9.7 percent more coal and 4.2 percent more oil during the first 10 months of 1976 than during the same period in 1975. Utility natural gas consumption, however, declined 2.7 percent.

Sales of electricity to industrial customers for January to October 1976 totaled 612.4 billion kilowatt hours, up 10.3 percent from the level for the same period in 1975. Sales to commercial customers for the period totaled 356.1 billion kilowatt hours, an increase of 5.0 percent. Sales to residential customers, at 502.8 billion kilowatt hours, were 1.0 percent higher.

The primary cause of the increase in industrial sales appears to be the 6.7-percent increase in industrial output during the period, accompanied by a 3.1-percent increase in the number of industrial electricity customers and the relatively constant real price of electricity to these customers.

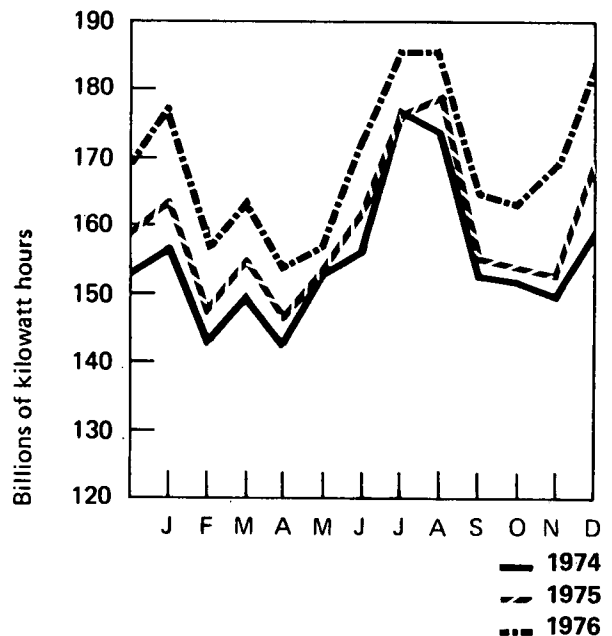
Commercial sales continued to grow at their approximate historical rate. Last year's growth reflects the combined effects of a 1.6-percent increase in the number of commercial electricity customers, increased activity in the services sector of the economy, and a 3.7-percent real increase in commercial electricity rates.

The slight increase in residential sales is due to a 2.1-percent increase in the number of residential electricity customers and a marginal increase in real residential electricity rates (1.4 percent).

Electric Utilities

		Total Net Production		Percentage Produced from Each Source					
		Millions of kilowatt hours		Coal	Oil	Gas	Nuclear	Hydro-electric	Other*
1972	TOTAL	1,749,629	AVG.	44.2	15.5	21.4	3.1	15.6	0.1
1973	TOTAL	1,860,302	AVG.	45.7	16.8	18.3	4.5	14.6	0.1
1974	January	157,244		46.9	16.6	13.2	4.8	18.4	0.1
	February	142,463		46.5	15.8	13.3	5.7	18.6	0.1
	March	150,033		45.2	14.7	15.7	5.9	18.4	0.1
	April	142,010		44.3	14.0	16.9	5.0	19.6	0.2
	May	153,503		44.2	14.7	18.5	4.3	18.2	0.1
	June	156,148		43.3	14.7	20.3	4.5	17.0	0.1
	July	177,979		43.0	15.5	20.9	5.7	14.8	0.1
	August	173,858		43.1	15.6	20.3	7.1	13.8	0.1
	September	152,211		42.9	16.4	19.3	7.2	14.0	0.2
	October	151,968		44.2	16.8	18.6	7.1	13.2	0.1
	November	149,831		44.9	18.3	15.2	7.3	14.1	0.2
	December	159,727		45.5	19.2	12.4	8.3	14.4	0.2
	TOTAL	1,866,975	AVG.	44.5	16.0	17.2	6.1	16.1	0.2
1975	January	164,317		45.6	18.6	12.0	8.5	15.2	0.1
	February	147,071		45.8	16.9	12.3	8.7	16.2	0.1
	March	155,481		44.5	14.9	12.9	9.6	18.0	0.1
	April	146,213		44.1	14.5	13.9	9.1	18.2	0.2
	May	153,221		42.2	13.7	16.8	9.0	18.1	0.2
	June	162,431		43.3	14.2	17.7	7.9	16.7	0.2
	July	176,804		43.2	14.2	19.3	8.7	14.4	0.2
	August	179,703		43.9	15.6	18.9	8.8	12.6	0.2
	September	155,213		44.2	13.8	19.3	9.3	13.2	0.2
	October	154,935		44.6	14.2	17.0	9.4	14.6	0.2
	November	152,786		46.1	14.1	14.3	9.3	16.0	0.2
	December	169,364		46.5	15.9	12.2	9.9	15.3	0.2
	TOTAL	1,917,539	AVG.	44.5	15.1	15.6	9.0	15.6	0.2
1976	January	178,353		47.0	18.1	11.1	9.0	14.6	0.2
	February	156,691		46.9	15.8	12.2	9.2	15.6	0.2
	March	164,163		46.6	15.5	13.0	8.5	16.2	0.2
	April	153,152		47.4	15.2	14.3	7.2	15.7	0.2
	May	157,353		46.1	13.8	16.1	7.6	16.2	0.2
	June	173,367		44.4	14.5	17.1	9.1	14.7	0.2
	July	186,324		44.7	14.5	17.1	9.5	14.0	0.2
	August	186,343		45.2	15.2	16.8	9.8	12.8	0.2
	September	164,846		45.7	14.3	17.0	10.5	12.3	0.2
	October	163,056		46.9	14.7	14.7	10.6	13.0	0.2
	November	169,592		NA	NA	NA	9.5	NA	NA
	December	184,459		NA	NA	NA	11.4	NA	NA
	TOTAL	2,037,699							

Total Net Production



*Includes electricity produced from geothermal power, wood, and waste.

NA=Not available.

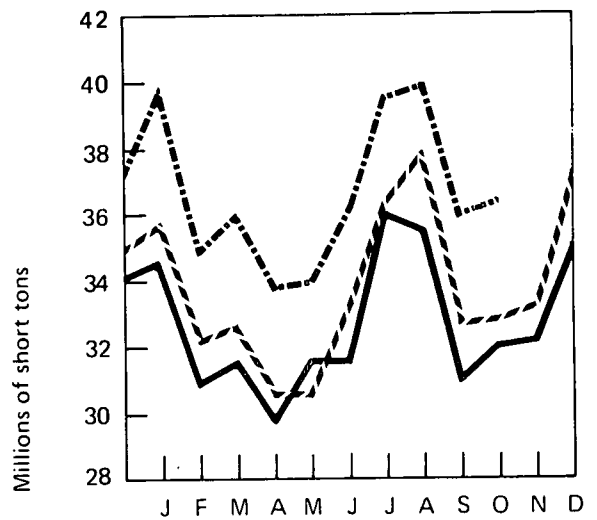
Note: There are minor revisions in most of the data.

Sources: Federal Power Commission; data for latest 2 months are from Edison Electric Institute and U.S. Nuclear Regulatory Commission.

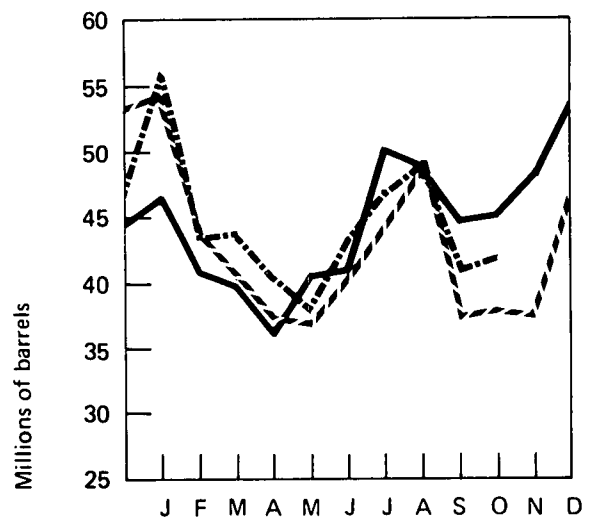
Fuel Consumption

		Coal	Oil	Gas
		Thousands of short tons	Thousands of barrels	Millions of cubic feet
1972	TOTAL	352,392	493,692	3,976,770
1973	TOTAL	389,707	560,146	3,643,721
1974	January	34,606	46,731	219,324
	February	30,864	40,660	201,622
	March	31,645	39,636	253,840
	April	29,683	35,957	259,323
	May	31,707	40,821	307,006
	June	31,726	41,238	346,639
	July	36,119	50,168	403,480
	August	35,558	48,993	380,679
	September	30,982	44,562	313,037
	October	32,129	45,267	298,345
	November	32,218	48,563	238,896
	December	35,185	53,648	207,072
	TOTAL	392,422	536,244	3,429,263
1975	January	35,843	54,180	204,591
	February	32,097	43,670	188,448
	March	32,793	40,542	210,204
	April	30,547	37,132	213,742
	May	30,574	37,077	273,927
	June	33,456	41,034	306,811
	July	36,567	44,512	360,560
	August	37,967	49,416	359,294
	September	32,609	37,123	315,135
	October	32,853	38,116	274,226
	November	33,333	37,627	227,102
	December	37,390	46,937	212,924
	TOTAL	406,029	507,366	3,146,964
1976	January	39,986	56,193	205,115
	February	34,965	43,234	198,105
	March	36,099	44,039	221,571
	April	33,805	40,238	226,685
	May	33,944	37,953	265,829
	June	36,381	43,640	311,962
	July	39,784	47,213	335,036
	August	40,317	49,058	328,100
	September	35,959	40,708	292,670
	October	36,529	42,082	248,097
	TOTAL (10 months)	367,769	440,358	2,633,170

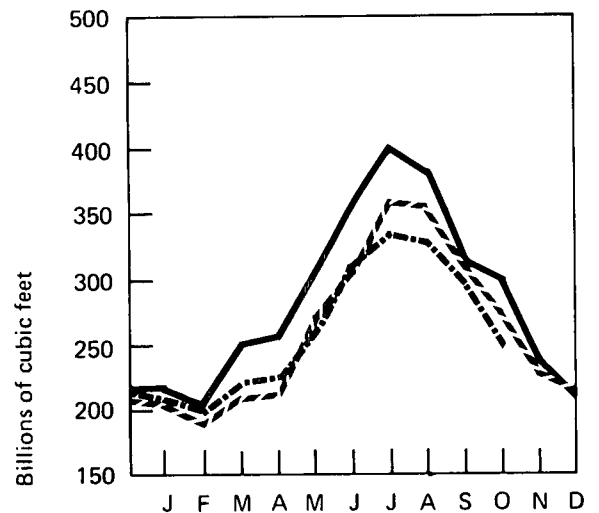
Coal Consumption



Oil Consumption



Gas Consumption



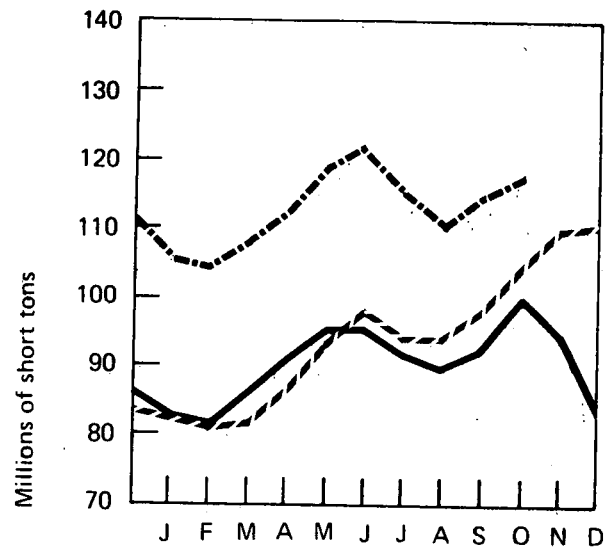
Note: There are minor revisions in most of the data.
Source: Federal Power Commission.

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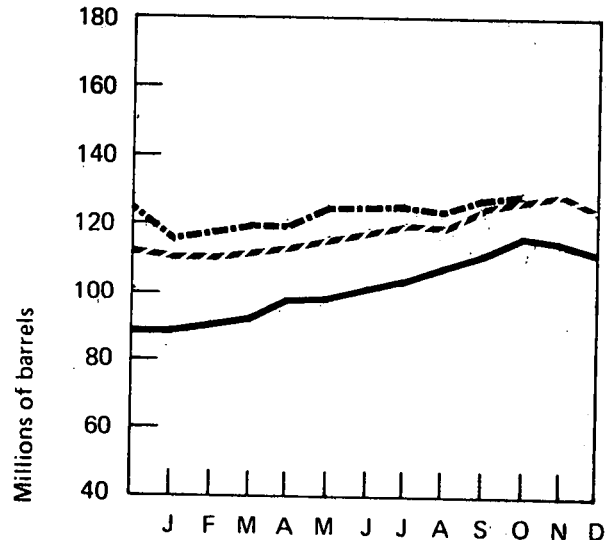
Electric Utilities (Continued)

		Stocks at End of Month	
		Coal	Oil
		Thousands of short tons	Thousands of barrels
1972		*100,009	*57,653
1973		*87,279	*89,216
1974	January	82,549	89,486
	February	81,734	91,670
	March	86,178	93,901
	April	91,036	98,073
	May	95,625	99,613
	June	95,918	102,416
	July	91,547	105,654
	August	89,502	109,697
	September	92,998	112,521
	October	100,536	118,049
	November	94,189	117,404
	December	83,542	112,916
1975	January	82,088	111,295
	February	80,972	111,500
	March	81,885	113,643
	April	86,829	114,298
	May	93,869	117,231
	June	98,031	118,936
	July	94,278	121,239
	August	94,213	120,665
	September	98,096	126,314
	October	105,415	128,882
	November	110,313	130,341
	December	110,750	125,158
1976	January	105,525	117,891
	February	104,880	118,806
	March	108,452	120,494
	April	112,864	120,345
	May	119,613	126,127
	June	122,960	126,221
	July	115,206	126,602
	August	110,753	125,745
	September	115,395	129,156
	October	118,152	130,934

Coal Stocks



Oil Stocks



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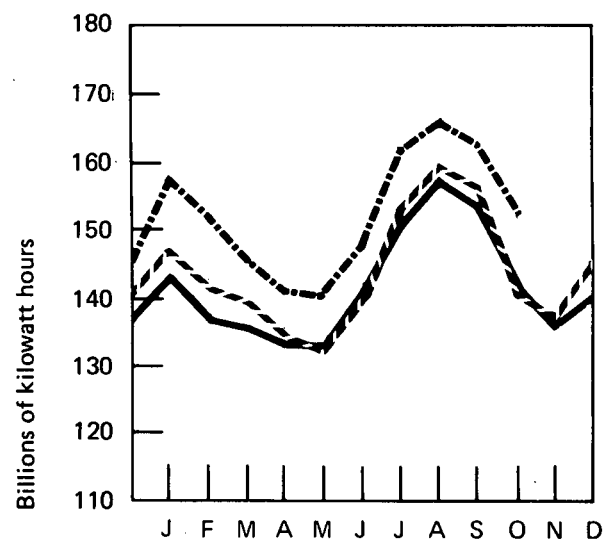
*As of December 31.

Note: There are minor revisions in most of the data.

Source: Federal Power Commission.

		Sales				
		Residential	Commercial	Industrial	Other*	Total
		Millions of kilowatt hours				
1972	TOTAL	538,609	359,265	640,978	56,309	1,595,161
1973	TOTAL	579,231	388,266	686,085	59,326	1,712,909
1974	January	52,878	30,647	55,457	5,004	143,986
	February	47,779	29,563	54,799	4,596	136,737
	March	46,096	29,345	55,814	4,697	135,952
	April	43,193	29,089	56,115	4,610	133,007
	May	41,105	30,061	57,226	4,685	133,077
	June	46,597	32,989	57,702	4,643	141,931
	July	53,541	35,498	57,503	4,969	151,511
	August	56,699	36,702	59,641	5,070	158,112
	September	52,948	35,801	59,893	4,977	153,619
	October	44,164	32,275	60,116	4,800	141,355
	November	42,671	30,986	57,157	4,952	135,784
	December	50,512	31,868	53,433	5,039	140,852
	TOTAL	578,183	384,824	684,874	58,042	1,705,923
1975	January	54,003	32,405	55,505	5,954	147,867
	February	50,219	31,459	54,328	5,544	141,550
	March	47,968	31,194	54,437	5,639	139,238
	April	44,762	30,473	53,910	5,269	134,414
	May	41,077	30,926	54,767	5,404	132,174
	June	45,766	35,210	55,369	5,384	141,729
	July	54,586	38,031	55,645	5,668	153,930
	August	R57,291	R38,576	R57,868	R5,709	R159,444
	September	56,983	37,550	56,797	5,320	156,650
	October	45,142	33,329	56,486	5,194	140,151
	November	44,019	32,288	56,174	5,235	137,716
	December	51,900	33,183	55,532	5,357	145,972
	TOTAL	R593,716	R404,624	R666,818	R65,677	R1,730,835
1976	January	60,091	34,833	57,448	6,380	158,752
	February	54,264	33,583	58,228	5,874	151,949
	March	47,060	32,273	60,516	5,990	145,839
	April	43,551	31,598	60,106	5,407	140,662
	May	41,036	32,347	61,271	5,478	140,132
	June	44,157	35,707	62,419	5,344	147,627
	July	54,314	39,455	62,877	5,895	162,541
	August	R57,256	R39,517	R64,184	R5,835	R166,792
	September	53,746	40,141	62,968	6,096	162,951
	October	47,296	36,667	62,371	5,873	152,207
	TOTAL (10 months)	502,771	356,121	612,388	58,172	1,529,452

Total Sales



*Includes street lighting and trolley cars.

Source: Federal Power Commission; data for latest 2 months are from Edison Electric Institute.

— 1974
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Nuclear Power

The 55 domestic reactors in commercial operation, with a maximum dependable capacity totaling 36,814 megawatts, performed at 72 percent of capacity during December. This high performance level was supported by 28 of the reactors operating at greater than 80 percent of capacity.

St. Lucie 1, an 810-megawatt pressurized water reactor (PWR) owned by the Florida Power and Light Company of Miami, achieved commercial operating status on December 20. Crystal River 3, an 855-megawatt PWR owned by the Florida Power Corporation of St. Petersburg, received an operating license on December 3 and is now undergoing power ascension (see Definitions). Including these two plants, four reactors with a capacity of 3,155 megawatts are currently operable in the State of Florida.

After nearly 3 years of technical delays, Ft. St. Vrain, the first commercial high temperature gas-cooled reactor (HTGR) in the United States, began to produce electricity in December. The 330-megawatt reactor, built for Public Service of Colorado by the General Atomic Company, initially loaded fuel in January 1974, but successful operation of the plant was hampered by repeated problems with helium gas recirculators and other systems.

During 1976, total domestic nuclear capacity (reactors in commercial operation and power ascension) increased about 17 percent, from 36,750 megawatts (58 reactors) to 42,934 megawatts (64 reactors). This represents approximately 8.3 percent of all domestic electrical generating capacity. Output from nuclear powerplants accounted for about 9.3 percent of the Nation's total electricity production in 1976, compared with 9.0 percent and 6.1 percent in 1975 and 1974, respectively.

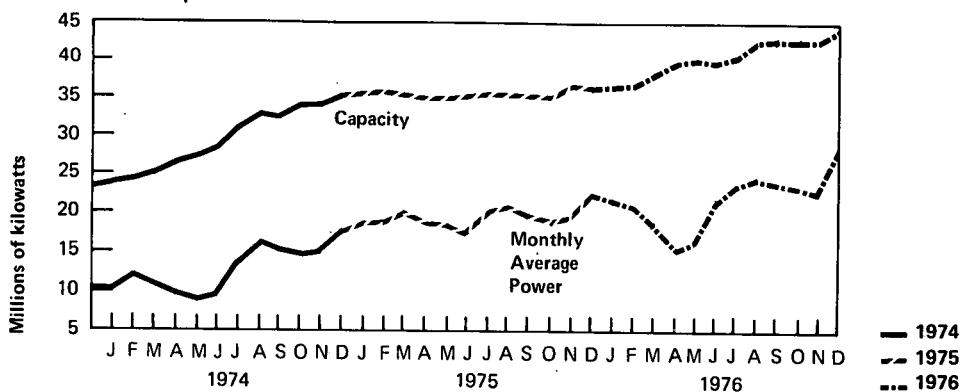
Early in December, the Energy Research and Development Administration (ERDA) presented its program for selection of six sites for terminal repository storage of commercial high-level nuclear reactor waste. Current plans call for geological core samplings in 13 States in an effort to locate

deep, stable formations isolated from surrounding ground water. ERDA envisions that liquid wastes from spent fuel reprocessing will be first solidified, encased in stainless steel canisters, and then deposited into these formations. Two sites will be selected by 1978 after which the program calls for initial test-phase operations by 1985. To accommodate this effort, ERDA budget outlays for commercial waste management, which totaled \$83 million in fiscal year 1977, will rise to about \$125 million in fiscal year 1978 and will represent about 25 percent of all expenditures for nuclear fuel cycle and safeguard research and development.

U.S. Nuclear Powerplant Operations*

		Maximum Dependable Capacity	Average Power	Percent of Total Domestic Electricity Generation
Thousands of net kilowatts				
1972		7,726	6,174	3.1
1973		13,850	8,760	4.5
1974	January	24,006	10,219	4.8
	February	24,776	12,077	5.7
	March	25,305	11,797	5.9
	April	26,862	9,901	5.0
	May	27,670	8,820	4.3
	June	28,748	9,833	4.5
	July	31,374	13,723	5.7
	August	33,045	16,577	7.1
	September	32,609	15,292	7.3
	October	34,464	14,602	7.1
	November	34,480	15,283	7.3
	December	35,317	17,860	8.3
	AVERAGE	29,921	13,011	6.1
1975	January	35,691	R18,734	8.5
	February	35,899	R18,948	R8.7
	March	35,686	20,016	9.6
	April	35,017	R18,521	9.1
	May	35,017	R18,500	9.0
	June	35,322	17,699	R7.8
	July	35,596	R20,661	8.7
	August	35,589	21,102	8.8
	September	35,540	R19,604	9.3
	October	35,540	18,657	9.4
	November	36,752	19,671	9.3
	December	36,424	22,417	R9.8
	AVERAGE	35,671	R19,604	9.0
1976	January	36,750	R21,638	R9.0
	February	36,879	R20,657	9.2
	March	38,072	R18,813	8.5
	April	39,763	R15,253	7.2
	May	39,902	R16,034	R7.6
	June	39,781	R21,874	R9.1
	July	40,168	R23,786	9.5
	August	42,067	R24,655	R9.8
	September	42,896	R23,938	10.5
	October	42,877	R23,161	R10.6
	November	R42,877	**22,379	**9.5
	December	**43,673	**28,377	**11.4
	AVERAGE	40,642	21,734	9.3

U.S. Nuclear Powerplants



*Includes all units licensed to operate, whether in commercial operation or power ascension status.

**Preliminary data.

R=Revised data.

Sources: Average Power for latest 2 months and Capacity are from U.S. Nuclear Regulatory Commission; Percent of Total Domestic Electricity Generation for latest 2 months is based on data from Edison Electric Institute; remaining data are from Federal Power Commission.

Status of Nuclear Powerplants — December 31, 1976

Status	Number of Plants				Design Capacity	
	Boiling Water Reactors	High Temperature Gas Reactors	Pressurized Water Reactors	Other*	Total	Net Electrical Megawatts
Licensed to operate	24	1	37	0	62	45,000
Construction permit granted	20	0	52	0	72	76,000
Construction permit pending	21	0	41	4	66	74,000
Orders placed for plant	3	0	13	0	16	18,000
Publicly announced	—	—	—	19	19	23,000
TOTAL	68	1	143	23	235	236,000

*Includes 1 Liquid Metal Fast Breeder Reactor and 23 announced intentions to order for which a reactor type has not been chosen.

Source: U.S. Nuclear Regulatory Commission.

U.S. Uranium Enrichment — December 1976

	Domestic Customers	Foreign Customers	Total
Separative Work Performed (in metric tons of separative work units)	673.950	656.057	1,330.007
Cost (in millions of dollars)	43.390	41.781	85.171
Product Quantity (in metric tons of uranium)	206.653	165.950	372.603
Feed Requirement (in metric tons of uranium)	933.174	843.773	1,776.947

Source: U.S. Energy Research and Development Administration.

Nuclear Power Generation by Major Non-Communist Countries — December 1976*

Country	Number of Reactors	Capacity	Generation of Electricity			
			Generation December	Percent of Design Capacity		
				December	Year 1974	Year 1975
		Thousands of gross electrical kilowatts	Millions of gross kilowatt hours			
Canada	6	3,130	1,787	77	74	64
Federal Republic of Germany	10	6,410	3,802	80	57	72
France	10	3,070	1,385	61	57	68
Great Britain	31	7,560	4,417	58	61	57
India	3	620	276	60	55	46
Italy	3	630	353	75	61	69
Japan	13	7,430	3,052	55	61	36
Spain	3	1,120	777	93	75	77
Sweden	5	3,310	1,990	81	20	44
Switzerland	3	1,050	753	96	76	84
United States	60	44,080	22,208	68	57	60
TOTAL	147	78,410	40,800	70	58	58

*Includes only operational units, i.e., those which have generated electricity during, or prior to, the current month.

Source: *Nucleonics Week*.

Summary of Monthly Nuclear Fuel Cycle -- November 1976

Fuel Cycle Activity	Product	Processed Material*	Percent Utilization of Industry Capacity	Energy Content of Processed Material**	Energy Consumed in Fuel Cycle Activity***	Cost Contribution to Electric Power†
		MTU except where noted			Billion Btu	Mills per kilowatt hour
Milling	Yellowcake (U ₃ O ₈) Deliveries	724	64	249,000	410	1.27
Conversion	Uranium Hexafluoride (UF ₆) Deliveries	1,067	74	370,000	230	0.16
Enrichment	Enriched UF ₆ Deliveries	181 (939 MT-SWU)	††	375,000	4,400	1.53
Fabrication	Finished Fuel Assemblies Shipped	83	34	15,600	11	0.47
Powerplant Operation	Electricity Generated	16,918 (million kWhe)	54	180,000	780 (million kWhe)	10.93
	Spent Fuel Discharged	NA	—	—	—	†††1.57
Reprocessing	Spent Fuel Received	0	—	—	—	
	Spent Fuel Reprocessed	0	—	—	—	

*Units of measure are discussed in Explanatory Notes 10 and 11.

**Assumes 25,000 MWD/MTU for heat content of enriched uranium and a 6.1 feed to product ratio at the enrichment plant.

***Energy requirements for processing are obtained from U.S.A.E.C. Report No. WASH 1248.

†Cost contribution is computed from unit prices paid for current month's production and requirement for a model 1000 MWe reactor operating at 65 percent capacity factor. Because of the long lead time required for nuclear fuel processing, the sum of numbers in this column does not necessarily reflect the fuel cost of current electricity production.

††ERDA's enrichment plans are presently operating at maximum utilization of available electric power, with the excess production being placed in the "Preproduction stockpile" in anticipation of high demand for enriched uranium in the 1980's.

†††Figure represents current industry estimate for cost of spent fuel shipment, reprocessing, and waste deposition, exclusive of cost credits for recovered uranium and plutonium.

NA=Not available.

Source: ERDA.

Petroleum Consumption and Forecast

Total domestic demand for petroleum products during December 1976 was 19.74 million barrels per day. This was 3.5 percent above the forecast level, 9.8 percent above the December 1975 level, and 9.6 percent above December demand during 1974.

These large increases were concentrated in distillate and residual fuel oil, partly because of increased demand for heating oil due to colder weather. (Distillate oil heating degree-days for December 1976 were 24 percent greater than those for December 1975.) Demand for distillate fuel oil in December was 4.50 million barrels per day, 4.8 percent above the forecast level, 19.0 percent above December 1975 demand, and 16.7 percent above the demand level for December 1974. Demand for residual fuel oil in December 1976 was 3.30 million barrels per day, 14.4 percent above the forecast level and 20.9 percent and 10.6 percent above the levels for December 1975 and December 1974, respectively.

Demand for gasoline was also higher in December. Gasoline consumption was 7.04 million barrels per day, 0.9 percent above the forecast level and 3.4 percent and 7.3 percent above the levels for December 1975 and December 1974, respectively.

Energy Consumption

Domestic Energy Consumption by Primary Energy Type
[Quadrillion (10¹⁵) Btu]

		Coal *	Natural Gas (dry)	Petroleum	Hydroelectric Power**	Nuclear Electric Power	Total	Cumulative Total
1972	TOTAL	12.424	22.984	32.965	2.946	0.567	71.895	
1973	TOTAL	13.294	22.512	34.852	3.006	0.888	74.553	
1974	January	1.167	2.284	2.951	0.314	0.081	6.796	6.796
	February	1.048	2.103	2.677	0.290	0.087	6.205	13.000
	March	1.069	2.051	2.749	0.300	0.094	6.263	19.263
	April	1.017	1.732	2.631	0.303	0.076	5.759	25.021
	May	1.048	1.647	2.684	0.304	0.070	5.753	30.774
	June	1.033	1.474	2.662	0.290	0.075	5.535	36.309
	July	1.131	1.550	2.791	0.287	0.109	5.867	42.177
	August	1.134	1.546	2.825	0.263	0.131	5.900	48.076
	September	1.022	1.574	2.647	0.236	0.117	5.596	53.672
	October	1.071	1.747	2.910	0.222	0.116	6.066	59.738
	November	1.041	1.871	2.866	0.233	0.117	6.128	65.866
	December	1.109	2.154	3.075	0.253	0.142	6.733	72.599
	TOTAL	12.889	21.732	33.468	3.295	1.215	72.599	
1975	January	R1.161	2.302	3.069	0.274	0.149	R6.955	R6.955
	February	1.066	1.986	2.659	0.262	R0.136	R6.109	13.064
	March	R1.100	1.949	2.785	0.305	0.159	R6.297	R19.361
	April	R1.016	1.613	2.650	0.291	0.142	R5.711	R25.072
	May	R0.995	1.363	2.580	0.302	0.147	R5.387	R30.459
	June	1.044	1.287	2.579	0.296	0.136	5.342	R35.801
	July	R1.104	1.345	2.690	0.279	0.164	R5.582	R41.383
	August	R1.144	1.402	2.691	0.249	R0.169	5.655	R47.038
	September	R1.027	1.403	2.605	0.227	0.153	R5.415	R52.453
	October	R1.047	1.581	2.790	0.249	0.156	R5.823	R58.276
	November	R1.071	1.679	2.597	0.268	0.151	R5.766	R64.042
	December	R1.188	2.098	3.070	0.284	0.178	R6.818	R70.860
	TOTAL	R12.964	20.007	32.766	3.285	R1.839	R70.860	
1976	January	1.233	2.352	3.175	0.285	R0.172	R7.216	R7.216
	February	R1.091	1.867	2.783	0.269	R0.153	R6.162	R13.378
	March	1.132	1.866	2.953	0.291	0.149	R6.391	R19.769
	April	R1.062	1.540	2.754	0.265	0.117	R5.738	R25.507
	May	1.065	1.468	2.727	R0.279	R0.127	R5.667	R31.173
	June	R1.111	1.359	2.781	0.280	R0.168	R5.698	R36.871
	July	1.185	1.382	2.836	R0.285	R0.189	R5.877	R42.748
	August	R1.201	R1.359	2.841	0.262	R0.196	R5.858	R48.606
	September	R1.105	R1.321	2.779	0.225	R0.184	R5.614	R54.220
	October	R1.126	R1.649	R2.911	R0.233	R0.184	R6.103	R60.323
	November***	1.142	1.915	3.013	0.239	0.172	6.481	66.804
	TOTAL (11 months)	12.452	18.078	31.551	2.912	1.810	66.804	

*Includes bituminous coal, lignite, and anthracite coal.

**Includes utility production, industrial production, and net imports.

***Partially estimated.

Source: FEA.

Energy Consumption by Economic Sector and Primary Source — October 1976 [Quadrillion (10¹⁵) Btu]

Sector ¹	Primary Energy Source					Primary Energy Consumption	Electricity Distributed ⁷	Net Energy Consumption	Electrical Energy Loss Distributed ⁸	Ultimate Energy Disposition
	Coal ²	Natural Gas (dry) ³	Petroleum ⁴	Hydroelectric ⁵	Nuclear ⁶					
Residential and Commercial	0.012	0.397	0.584	—	—	0.994	0.301	1.295	0.706	2.001
Industrial	0.302	0.948	0.533	0.003	—	1.786	0.213	1.998	0.499	2.498
Transportation	0.001	0.049	1.536	—	(⁹)	1.585	0.006	1.591	0.013	1.604
Electric Utilities	0.811	0.255	0.257	0.230	0.184	1.738	—	—	—	—
TOTAL	1.126	1.649	2.911	0.233	0.184	6.103	0.519	4.884	1.218	6.103

¹ See Explanatory Note 12 for definitions of the Residential and Commercial, Industrial, Transportation, and Electric Utilities Sectors.

² Data are from the Bureau of Mines. Includes anthracite and bituminous coal and lignite.

³ Aggregate data are from the Bureau of Mines. FPC provided data on natural gas consumed by electric utilities. Data from the American Gas Association are used for the Residential and Commercial Sector, adjusted to include a portion of the AGA "Other" category. Natural gas used in transportation, mostly for pipeline use, is estimated to be 3.5 percent of total natural gas consumption less electric utilities. This percentage is derived from 1974 Bureau of Mines data on consumption. The Industrial Sector is then the difference between the total and the sum of the other sectors.

⁴ Aggregate petroleum data are from the Bureau of Mines. FPC provided data on oil consumed by electric utilities.

Petroleum consumed in transportation was calculated based on Department of Transportation data as follows: Motor gasoline - 100 percent; naphtha jet fuel - 100 percent; kerosene jet fuel - 97 percent; distillate fuel oil - 30.3 percent; residual fuel oil - 11.2 percent; all other products - 4.7 percent. The remainder is distributed to economic sectors using the following percentage shares, derived from 1974 Bureau of Mines data on consumption: Residential and Commercial - 52.3 percent; Industrial - 47.7 percent.

⁵ FPC hydroelectric power production plus net imports of electricity from Canada. These imports, estimated at 0.011 quadrillion Btu per month, were assumed to be from hydroelectric power sources. Monthly industrial hydroelectric power consumption is estimated to be one-twelfth of the preliminary Bureau of Mines annual figure for 1975.

⁶ FPC nuclear power production.

⁷ Electricity was distributed using Edison Electric Institute data on kilowatt-hour sales to ultimate customers. Electrical energy consumed by railroads and for street and highway lighting was distributed to the Transportation Sector. All "other" sales, largely for use in government buildings, were distributed to the Residential and Commercial Sector.

⁸ In generating electricity with nuclear or fossil fuels, approximately 65 percent of the energy is lost in the form of heat. Transmission and distribution losses consume about an additional 3 percent of the energy inputs of the utility industry. In order to fully account for all energy consumed both directly and indirectly (i.e., ultimate energy disposition), the electricity losses are allocated to the final end-use sectors in proportion to their direct kilowatt-hour usage.

⁹ Negligible.

Energy Consumption (Continued)

Percent Changes in Energy Consumption for October 1976 by Sources and Economic Sectors

	October 1976 Consumption	Percent Change from October 1975	Cumulative Percent Change from 1975 (January through October)*
	Quadrillion Btu		
Refined Petroleum Products	2.911	+4.3	+5.0
Motor Gasoline	1.133	+2.8	+4.1
Jet Fuel	0.158	-8.6	-2.6
Distillate	0.547	+13.2	+4.2
Residual	0.489	+12.2	+10.5
Other Petroleum Products	0.583	-0.6	+5.6
Natural Gas (Dry)	1.649	+4.3	-0.7
Coal (Anthracite, bituminous, and lignite)	1.126	+7.5	+5.3
Electricity (Sales)	0.519	+8.6	+5.3
TOTAL ENERGY USE	6.103	+4.8	+3.2
Economic Sector Consumption			
Residential and Commercial	2.001	+6.0	+0.8
Industrial	2.498	+5.2	+5.4
Transportation	1.604	+2.9	+3.5

*Calculated on daily average basis.

Energy Consumption by the Residential and Commercial Economic Sector¹

		Coal	Natural Gas (dry)	Petroleum ²	Electricity Distributed	Electrical Energy Loss Distributed	Total Energy Use	Cumulative Total Energy Use
Quadrillion (10 ¹⁵) Btu								
1973	TOTAL	0.295	7.577	7.077	3.445	8.120	26.515	
1974	January	0.040	1.158	0.662	0.297	0.700	2.856	2.856
	February	0.034	1.027	0.590	0.274	0.601	2.526	5.381
	March	0.027	0.902	0.569	0.268	0.644	2.411	7.792
	April	0.019	0.754	0.530	0.258	0.598	R2.157	9.950
	May	0.016	0.499	0.497	0.254	0.655	1.921	11.871
	June	0.015	0.357	0.503	0.283	0.687	R1.846	R13.717
	July	0.014	0.293	0.507	0.316	0.847	R1.978	15.694
	August	0.021	0.265	0.519	0.331	0.809	1.945	17.639
	September	0.025	0.278	0.513	0.315	0.655	1.786	19.424
	October	0.027	0.395	0.589	0.272	0.637	1.921	21.345
	November	0.027	0.569	0.583	0.263	0.638	2.080	23.425
	December	0.031	0.930	0.628	0.293	0.742	2.624	26.049
	TOTAL	0.297	7.427	6.688	3.424	R8.214	26.049	
1975	January	R0.035	1.124	0.648	0.310	R0.758	2.876	2.876
	February	0.023	1.105	0.553	0.292	0.646	2.620	R5.495
	March	0.023	1.018	0.565	0.284	0.693	2.583	R8.078
	April	R0.015	0.905	0.506	0.270	0.632	R2.327	R10.406
	May	R0.012	0.522	0.457	0.267	0.681	R1.939	R12.345
	June	0.014	0.338	0.451	0.297	0.756	R1.855	R14.200
	July	0.016	0.294	0.481	0.331	0.853	1.975	R16.175
	August	R0.015	0.267	0.460	R0.342	R0.865	R1.950	R18.125
	September	R0.021	0.281	0.501	0.336	0.694	R1.832	R19.957
	October	0.024	0.353	0.555	0.280	0.677	R1.889	R21.846
	November	0.025	0.523	0.516	0.273	0.659	1.997	R23.843
	December	0.034	0.910	0.642	0.303	0.780	2.669	R26.511
	TOTAL	R0.257	7.640	R6.336	R3.584	R8.694	R26.511	
1976	January	R0.031	1.229	0.679	0.340	R0.711	R2.990	R2.990
	February	R0.020	1.106	0.595	0.314	0.687	R2.723	R5.713
	March	0.018	0.858	0.592	0.286	0.704	R2.458	R8.170
	April	R0.015	0.704	0.518	0.270	0.629	2.136	R10.307
	May	0.012	0.510	0.524	0.267	R0.647	1.960	R12.267
	June	R0.013	0.369	0.507	0.286	R0.753	R1.929	R14.196
	July	R0.009	0.297	0.502	0.335	R0.862	R2.005	R16.201
	August	R0.011	0.275	R0.524	R0.345	R0.855	R2.011	R18.212
	September	0.013	0.271	R0.537	0.336	R0.719	1.876	R20.088
	October	0.012	0.397	0.584	0.301	0.706	2.001	22.089
	TOTAL	0.155	6.017	5.562	3.080	7.275	22.089	
	(10 months)							

(See footnotes on page 49)

Energy Consumption (Continued)

Energy Consumption by the Industrial Economic Sector¹

		Coal	Natural Gas (dry)	Petroleum ³	Hydro-electric	Electricity Distributed	Electrical Energy Loss Distributed	Total Energy Use	Cumulative Total Energy Use
Quadrillion (10 ¹⁵) Btu									
1973	TOTAL	4.370	10.493	6.403	0.036	2.341	5.518	29.161	
1974	January	0.378	0.830	0.603	0.003	0.189	0.447	2.450	2.450
	February	0.354	0.804	0.538	0.003	0.187	0.409	2.295	4.745
	March	0.358	0.827	0.519	0.003	0.190	0.457	2.354	7.099
	April	0.352	0.662	0.483	0.003	0.191	0.444	2.136	9.235
	May	0.342	0.788	0.453	0.003	0.195	0.503	2.284	11.520
	June	0.326	0.724	0.458	0.003	0.197	0.478	2.186	13.706
	July	0.325	0.806	0.462	0.003	0.196	0.526	2.318	16.024
	August	0.335	0.853	0.473	0.003	0.203	0.497	2.365	18.389
	September	0.325	0.933	0.468	0.003	0.204	0.425	2.358	20.747
	October	0.347	0.997	0.537	0.003	0.205	0.480	2.570	23.316
	November	0.312	1.001	0.531	0.003	0.195	0.474	2.516	25.833
	December	0.309	0.945	0.573	0.003	0.182	0.462	2.475	28.307
	TOTAL	4.062	10.169	6.100	0.036	2.337	5.603	28.307	
1975	January	0.344	0.897	0.591	0.003	0.189	0.464	2.488	2.488
	February	0.344	0.626	0.505	0.003	0.185	0.410	2.074	4.562
	March	0.365	0.656	0.515	0.003	0.186	0.453	R2.178	R6.740
	April	R0.343	0.440	0.461	0.003	0.184	0.431	R1.862	R8.602
	May	R0.323	0.523	0.417	0.003	0.182	0.465	R1.913	R10.515
	June	R0.301	0.600	0.411	0.003	0.185	0.469	R1.970	R12.485
	July	R0.288	0.647	0.439	0.003	0.190	0.490	R2.056	R14.541
	August	R0.293	0.730	0.420	0.003	R0.197	R0.499	R2.142	R16.683
	September	0.294	0.761	0.457	0.003	0.194	0.400	R2.110	R18.793
	October	R0.305	0.902	0.506	0.003	0.193	0.466	R2.375	R21.168
	November	R0.318	0.872	0.471	0.003	0.192	0.464	2.320	R23.488
	December	R0.337	0.904	0.585	0.003	0.189	0.488	2.507	R25.994
	TOTAL	R3.858	8.556	5.779	0.036	R2.266	R5.499	R25.994	
1976	January	0.323	R1.041	0.620	0.003	0.196	R0.410	R2.593	R2.593
	February	R0.305	0.499	0.543	0.003	0.199	R0.434	R1.983	R4.576
	March	0.323	0.723	0.540	0.003	0.206	R0.509	R2.304	R6.880
	April	0.305	R0.557	0.473	0.003	0.205	R0.478	R2.022	R8.901
	May	0.313	R0.644	0.478	0.003	0.209	R0.506	R2.153	R11.054
	June	R0.298	R0.633	0.462	0.003	0.213	R0.561	R2.170	R13.224
	July	R0.297	0.705	0.458	0.003	0.215	R0.552	R2.230	R15.454
	August	R0.300	R0.711	R0.478	0.003	R0.219	R0.543	R2.254	R17.708
	September	R0.301	R0.714	0.489	0.003	0.215	R0.460	R2.181	R19.890
	October	0.302	0.948	0.533	0.003	0.213	0.499	2.498	22.387
	TOTAL	3.066	7.176	5.073	0.030	2.089	4.953	22.387	

(See footnotes on page 49)

Energy Consumption by the Transportation Economic Sector¹

		Coal	Natural Gas ⁴ (dry)	Petroleum	Electricity Distributed	Electrical Energy Loss Distributed	Total Energy Use	Cumulative Total Energy Use
Quadrillion (10 ¹⁵) Btu								
1973	TOTAL	0.009	0.733	17.940	0.058	0.137	18.877	
1974	January	0.001	0.072	1.399	0.005	0.013	1.490	1.490
	February	0.001	0.066	1.300	0.005	0.011	1.384	2.874
	March	0.001	0.063	1.417	0.005	0.012	1.498	4.372
	April	0.001	0.051	1.397	0.005	0.011	1.465	5.837
	May	0.001	0.047	1.484	0.005	0.012	1.547	7.384
	June	0.001	0.039	1.448	0.005	0.011	1.503	8.887
	July	0.001	0.040	1.514	0.005	0.012	1.572	10.458
	August	0.001	0.041	1.533	0.005	0.012	1.590	12.049
	September	0.001	0.044	1.393	0.005	0.010	1.453	13.501
	October	0.001	0.050	1.507	0.005	0.012	1.576	15.077
	November	0.001	0.057	1.455	0.005	0.013	1.532	16.609
	December	0.001	0.068	1.546	0.006	0.014	1.634	18.243
	TOTAL	0.009	0.638	17.392	0.060	0.144	18.243	
1975	January	0.001	0.073	1.498	0.006	0.014	1.592	1.592
	February	0.001	0.063	1.334	0.005	0.012	1.415	3.006
	March	0.001	0.061	1.456	0.005	0.013	1.536	4.542
	April	0.001	0.049	1.455	0.005	0.012	1.522	6.064
	May	0.001	0.038	1.480	0.005	0.012	1.536	7.600
	June	0.001	0.034	1.466	0.005	0.012	1.517	9.116
	July	0.001	0.034	1.498	0.005	0.012	1.550	10.666
	August	0.001	0.036	1.509	0.005	0.012	1.563	12.229
	September	0.001	0.038	1.420	0.005	0.010	1.473	13.703
	October	0.001	0.045	1.495	0.005	0.013	1.559	15.262
	November	0.001	0.051	1.379	0.006	0.013	1.449	16.711
	December	0.001	0.066	1.556	0.006	0.015	1.643	18.354
	TOTAL	0.008	0.587	17.547	0.062	0.150	18.354	
1976	January	0.001	R0.082	1.532	0.006	R0.012	R1.633	R1.633
	February	0.001	0.058	1.380	0.006	0.012	1.457	R3.090
	March	0.001	0.057	1.552	0.005	0.013	1.629	R4.719
	April	0.001	0.046	1.517	0.005	0.012	1.580	R6.298
	May	0.001	0.042	1.493	0.005	0.012	1.553	R7.852
	June	0.001	0.036	1.546	0.005	0.012	1.600	R9.451
	July	0.001	0.036	1.587	0.005	0.013	1.642	R11.093
	August	0.001	0.036	1.538	0.005	0.013	R1.593	R12.686
	September	0.001	R0.036	1.504	0.005	0.011	R1.557	R14.243
	October	0.001	0.049	1.536	0.006	0.013	1.604	15.846
	TOTAL	0.006	0.479	15.186	0.052	0.124	15.846	

¹ See Explanatory Note 12 for definitions of the Residential and Commercial, Industrial, and Transportation Sectors. The methodology used for sector calculation is provided in the footnotes of the previous table. Printed totals may differ slightly from the sum of their row/column components due to independent rounding.

² The percentage share used in calculating Residential and Commercial consumption of petroleum was 52.5 percent for 1973 and 52.3 percent for 1974, 1975, and 1976.

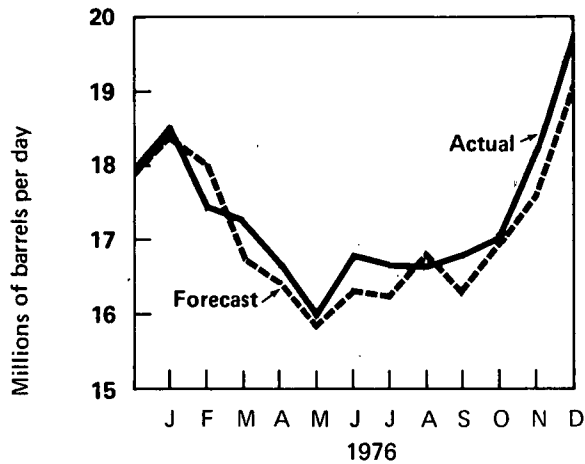
³ The percentage share used in calculating Industrial consumption of petroleum was 47.5 percent for 1973 and 47.7 percent for 1974, 1975, and 1976.

⁴ The percentage share used in calculating Transportation consumption of natural gas was 3.9 percent for 1973 and 3.5 percent for 1974, 1975, and 1976.

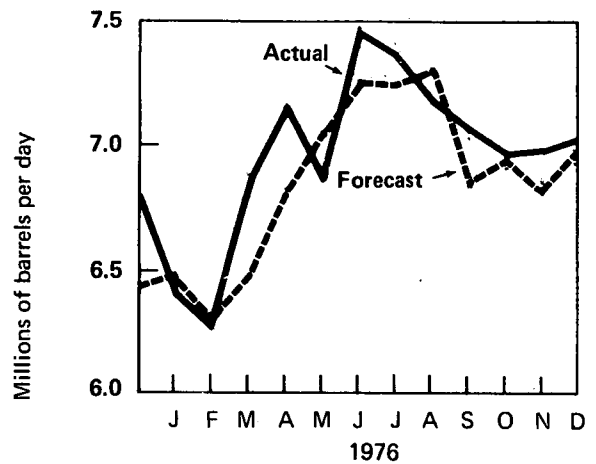
R=Revised data.

Petroleum Consumption and Forecast

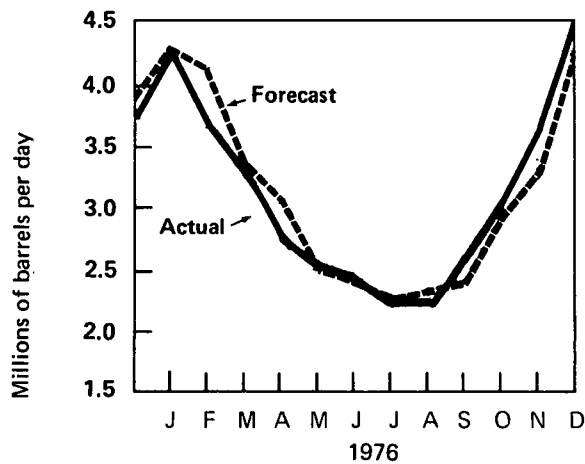
Total Domestic Demand for Petroleum Products



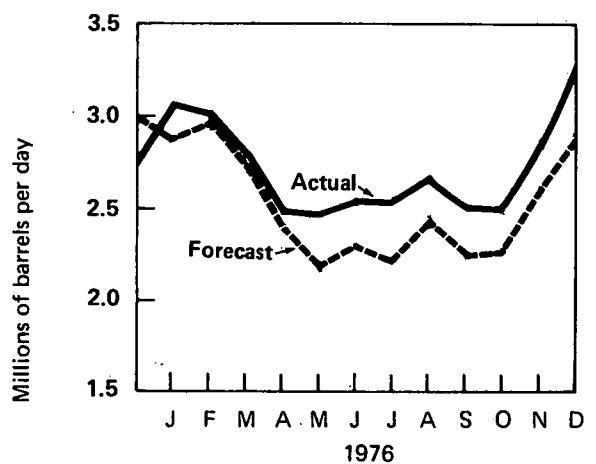
Domestic Demand for Motor Gasoline



Domestic Demand for Distillate Fuel Oil



Domestic Demand for Residual Fuel Oil



Notes:

Domestic Demand – Demand for products, in terms of real consumption, is not available; production plus imports plus withdrawals from primary stocks is used as a proxy for consumption. Secondary stocks, not measured by BOM and API, are substantial for some products.

Actuals – Based on BOM data for January through October and API data for November and December.

Forecast – See Explanatory Note 6 for discussion of basic assumptions for forecast.

Oil and Gas Exploration

Oil and gas rotary drilling rigs were operating at an 18-year high during January 1977 with 1,850 rigs in use. Rig activity normally peaks in December, declines to a seasonal low during the early months of the year, and picks up again during the spring. The January rig count represented a drop of 10 rigs from the count for December 1976, but an increase of 140 rigs over the count for January 1976.

A total of 39,763 wells were drilled during 1976, 6.6 percent more than during 1975. The number of gas wells drilled jumped 19.5 percent, setting a new record for the fourth year in a row. The increase in oil well completions was only 3.8 percent compared with 1975.

The number of seismic crews exploring for oil and gas increased for the second consecutive month during December, reaching the highest level since August 1975. A total of 286 crews (259 land, 27 marine) were active during the month, up 11 crews from the previous month's level. In spite of the year-end upswing, the average crew count for 1976, at 261, was 13 crews lower than the count for 1975.

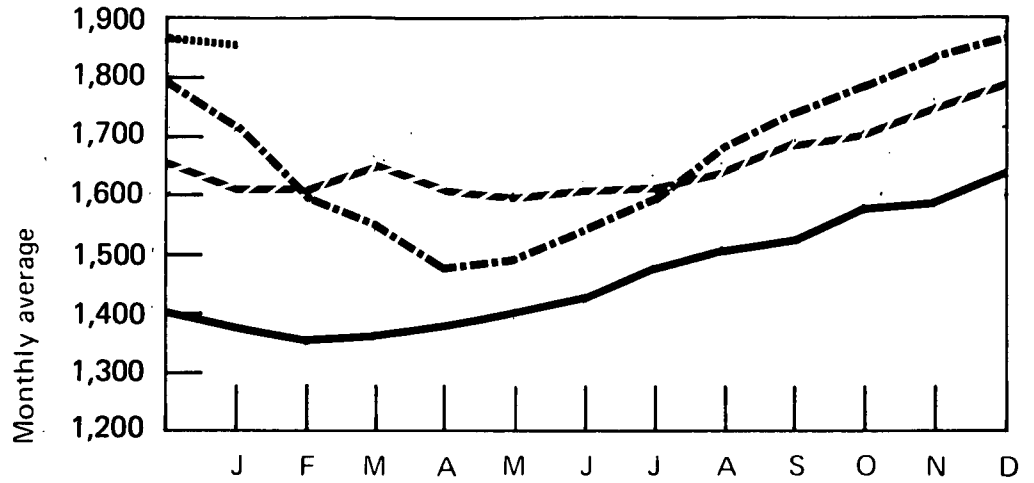
Oil and Gas Exploration

		Rotary Rigs in Operation	Wells Drilled				Total Footage of Wells Drilled
		Monthly average	Oil	Gas	Dry	Total	Thousands of feet
1972	AVERAGE	1,107	TOTAL 11,306	4,928	11,057	27,291	134,602
1973	AVERAGE	1,194	TOTAL 9,902	6,385	10,305	26,592	136,391
1974	January	1,372	763	577	803	2,143	10,392
	February	1,355	901	600	816	2,317	12,160
	March	1,367	936	638	1,003	2,577	12,844
	April	1,381	947	700	945	2,592	13,349
	May	1,412	957	520	870	2,347	11,460
	June	1,432	1,238	586	982	2,806	12,976
	July	1,480	1,008	461	884	2,353	11,802
	August	1,518	1,210	555	968	2,733	12,410
	September	1,527	1,200	600	1,091	2,891	12,676
	October	1,584	1,131	551	1,241	2,923	14,081
	November	1,596	1,008	626	1,053	2,767	11,795
	December	1,643	1,339	791	1,274	3,404	15,707
	AVERAGE	1,475	TOTAL* 12,784	7,240	11,674	31,698	150,551
1975	January	1,615	1,299	655	1,040	2,994	13,189
	February	1,611	1,097	458	933	2,488	12,071
	March	1,651	1,341	658	1,091	3,090	15,472
	April	1,604	1,181	506	1,071	2,758	13,545
	May	1,592	1,100	451	891	2,442	12,054
	June	1,613	1,246	509	1,022	2,777	13,540
	July	1,616	1,229	557	920	2,706	12,545
	August	1,645	1,272	587	1,122	2,981	14,221
	September	1,699	1,504	831	1,165	3,500	15,636
	October	1,716	1,633	682	1,310	3,625	16,689
	November	1,757	1,619	776	1,270	3,665	15,788
	December	1,793	1,817	832	1,424	4,073	17,556
	AVERAGE	1,660	TOTAL* 16,408	7,580	13,247	37,235	174,434
1976	January	1,710	1,465	772	1,055	3,292	14,517
	February	1,594	1,341	652	1,159	3,152	14,888
	March	1,540	1,726	821	1,301	3,848	18,126
	April	1,480	1,237	672	994	2,903	13,765
	May	1,496	1,501	658	1,104	3,263	14,196
	June	1,546	1,500	709	1,123	3,332	14,780
	July	1,597	1,312	730	916	2,958	13,716
	August	1,691	1,265	711	1,140	3,116	14,697
	September	1,744	1,474	909	1,199	3,582	16,777
	October	1,794	1,396	750	1,123	3,269	14,542
	November	1,840	1,291	698	1,222	3,211	14,642
	December	1,860	1,512	926	1,414	3,852	17,093
	AVERAGE	1,656	TOTAL* 17,024	9,057	13,682	39,763	181,856
1977	January	1,850	NA	NA	NA	NA	NA

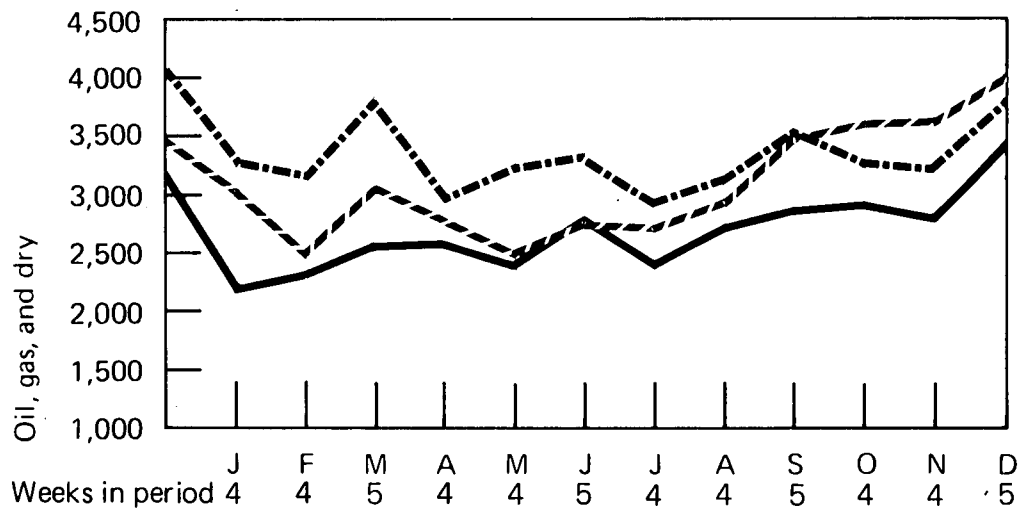
*Totals reflect subsequent data revisions and therefore may not agree with cumulative monthly data.
NA=Not available.

Sources: Rotary Rigs—Hughes Tool Company; Wells—American Petroleum Institute.

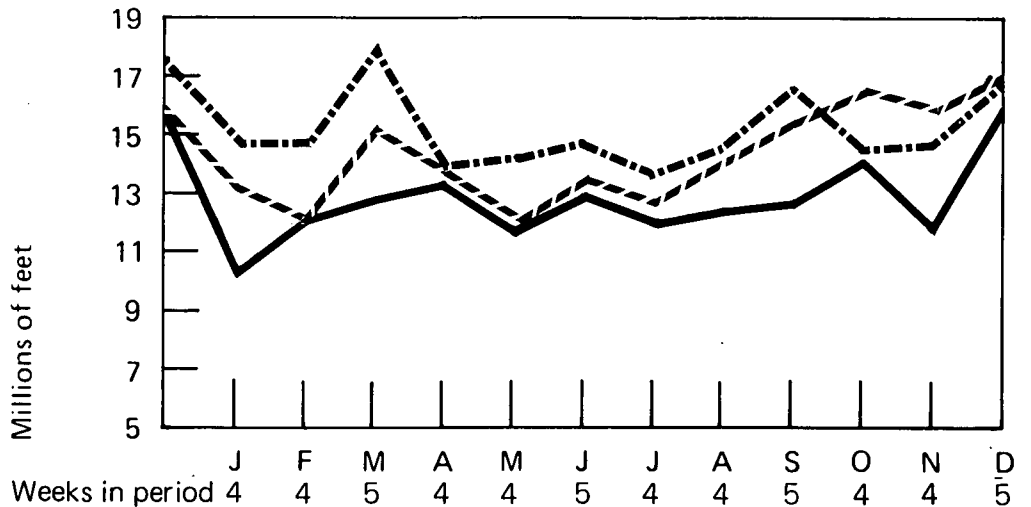
Rotary Rigs in Operation



Total Wells Drilled



Total Footage of Wells Drilled

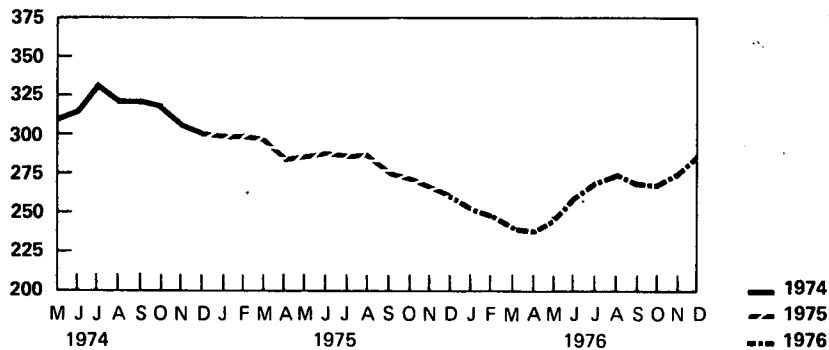


— 1974
 - - 1975
 - · - 1976
 ···· 1977

Oil and Gas Exploration (Continued)

		Crews Engaged in Seismic Exploration			Line Miles of Seismic Exploration		
		Offshore	Onshore	Total	Offshore	Onshore	Total
		Monthly average			Monthly average		
1972	Year	12	239	251	10,306	9,333	19,639
1973	Year	23	227	250	21,579	10,597	32,175
1974	Year	31	274	305	28,482	13,219	41,701
1975	Year	30	254	284	25,773	12,558	38,331
1974	January-April	NA	NA	NA			
	May	35	278	313			
	June	38	279	317			
	July	35	299	334			
	August	34	287	321			
	September	34	287	321			
	October	32	288	320			
	November	30	276	306			
	December	25	275	300			
1975	January	27	274	301			
	February	24	278	302			
	March	23	276	299			
	April	23	260	283			
	May	32	254	286			
	June	38	251	289			
	July	37	249	286			
	August	40	249	289			
	September	40	234	274			
	October	29	241	270			
	November	27	238	265			
	December	26	233	259			
1976	January	20	232	252			
	February	17	232	249			
	March	18	222	240			
	April	17	221	238			
	May	21	226	247			
	June	29	229	258			
	July	30	240	270			
	August	33	242	275			
	September	28	240	268			
	October	21	246	267			
	November	25	250	275			
	December	27	259	286			
	AVERAGE	24	237	261			

Total Seismic Crews



Motor Gasoline

The national average selling price for regular gasoline at full service retail outlets declined 0.1 cent in December to 59.9 cents per gallon. This was the second consecutive monthly decrease since prices exceeded the 60-cent level in August. The average price that retailers paid for regular gasoline also decreased during December (by 0.2 cent) to 52.0 cents per gallon, increasing the dealer margin to 7.9 cents per gallon.

Heating Oil

The national average price of heating oil sold to residential users was 41.8 cents per gallon in November, up 1.1 cents per gallon from the price in October. Since June 1976, the last month that heating oil was subject to price controls, residential prices have risen 2.5 cents per gallon.

Residual Fuel

The average No. 6 residual fuel oil retail price advanced 52 cents per barrel in October to \$11.82 per barrel. This amounts to an 87-cent increase since May 1976, the last month that residual fuel prices were subject to controls.

Crude Oil

The preliminary average "upper tier" crude oil price during November was \$11.62 per barrel, unchanged from the October figure.

The preliminary price of "lower tier" crude oil increased 2 cents in November to \$5.17 per barrel.

Upper tier and lower tier price ceilings were frozen on July 1, 1976, at their June levels. The change in these prices during November was due to variations in the quality and location of crude oil purchases.

The preliminary actual stripper oil price decreased 5 cents in November to \$13.30 per barrel. This was the first monthly price decrease since stripper oil was exempt from price controls on September 1, 1976.

The preliminary actual average domestic crude oil price during November was \$8.62 per barrel, 16 cents above the price in October. This increase resulted from a drop

in the percentage of lower tier oil sold at the wellhead due to the change in definition of property that became effective on September 1, 1976.

The preliminary refiner acquisition cost of domestic crude oil was \$9.16 per barrel in November, 3 cents above the revised October figure.

The preliminary refiner acquisition cost of imported crude was \$13.58 per barrel, 9 cents above the revised October figure.

The preliminary estimate for the composite cost of crude oil purchased by refiners rose 6 cents in November to \$11.26 per barrel.

Natural Gas

Major interstate natural gas pipeline companies paid an average of 43.6 cents per thousand cubic feet for gas purchased from domestic producers during July, down 0.1 cent from the price paid in June.

Prices received by independent producers during June for intrastate natural gas sold under new contracts ranged from 114.45 cents per thousand cubic feet in Kansas to 178.01 cents in Texas.

Utility Fossil Fuels

The national average cost of all fossil fuels delivered to utilities in August declined 0.3 cent to 112.9 cents per million Btu.

The national average cost of coal delivered to utilities was 86.4 cents per thousand cubic feet in August, an increase of 0.7 cent from the cost in July.

The average cost of residual fuel delivered to utilities increased 4.8 cents in August to 191.8 cents per thousand cubic feet. This was the largest monthly increase so far in 1976.

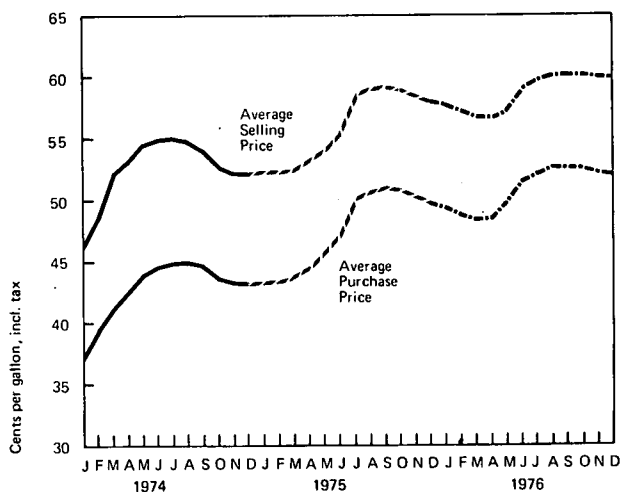
The average cost of natural gas delivered to utilities was 106.5 cents per thousand cubic feet in August, up 0.3 cent from the cost in July.

Motor Gasoline

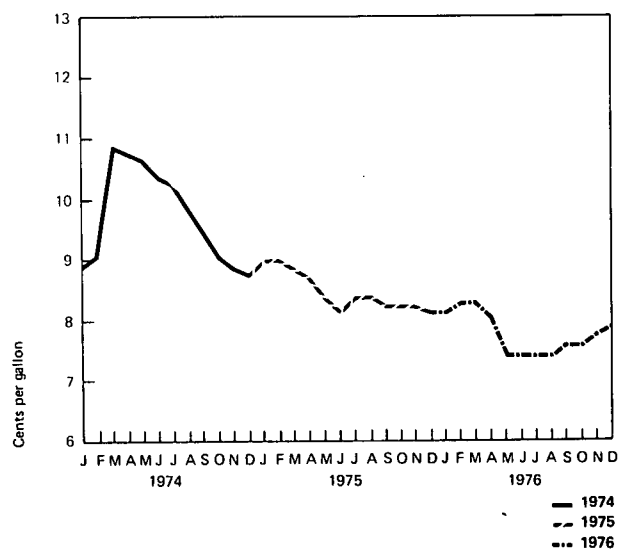
Regular Gasoline at Full Service Retail Outlets

		Average Selling Price	Average Purchase Price	Average Dealer Margin
		Cents per gallon, including tax *		
1974	January	46.3	37.4	8.9
	February	48.8	39.7	9.1
	March	52.3	41.4	10.9
	April	53.4	42.7	10.7
	May	54.7	44.1	10.6
	June	55.1	44.8	10.3
	July	55.2	45.0	10.2
	August	54.9	45.1	9.8
	September	54.2	44.8	9.4
	October	52.4	43.4	9.0
	November	52.0	43.2	8.8
	December	52.0	43.3	8.7
	AVERAGE	52.8	43.1	
1975	January	52.4	43.4	9.0
	February	52.5	43.5	9.0
	March	52.6	43.8	8.8
	April	53.5	44.9	8.6
	May	54.3	46.0	8.3
	June	55.6	47.5	8.1
	July	58.7	50.3	8.4
	August	59.2	50.8	8.4
	September	59.3	51.1	8.2
	October	58.9	50.7	8.2
	November	58.4	50.2	8.2
	December	58.0	49.9	8.1
	AVERAGE	56.2	47.8	
1976	January	57.7	49.6	8.1
	February	57.1	48.8	8.3
	March	56.6	48.3	8.3
	April	56.6	48.6	8.0
	May	57.4	50.0	7.4
	June	59.0	51.6	7.4
	July	59.6	52.2	7.4
	August	60.1	52.7	7.4
	September	60.2	52.6	7.6
	October	60.2	52.6	7.6
	November	60.0	52.2	7.8
	December	59.9	52.0	7.9

Average Retail Prices For Regular



Average Margins For Regular



*To derive prices excluding taxes, 12.2 cents per gallon may be deducted for 1974 and 1975, and 12.5 may be deducted for 1976.

Sources: FEA for January through December 1974; Lundberg Survey, Inc., for January 1975 forward.

Regular Gasoline at Self Service Retail Outlets

		Average Selling Price	Average Dealer Margin
		Cents per gallon, including tax	
1975	November	55.4	5.5
	December	54.9	5.3
1976	January	54.7	5.4
	February	53.8	5.4
	March	53.2	5.3
	April	53.2	4.9
	May	54.4	4.5
	June	56.3	4.8
	July	56.6	4.6
	August	56.7	4.4
	September	56.5	4.3
	October	56.5	4.4
	November	56.4	4.5
	December	56.1	4.5

Source: Lundberg Survey, Inc.

Motor Gasoline (Continued)

Average Selling Prices for Premium and Unleaded Gasoline
at Full Service Retail Outlets

		Premium	Unleaded (Regular)
		Cents per gallon, including tax	
1974	January	50.1	48.8
	February	52.6	50.8
	March	56.0	53.6
	April	57.2	55.1
	May	58.5	57.1
	June	58.5	57.4
	July	59.0	57.2
	August	58.0	56.8
	September	58.2	55.8
	October	56.6	54.1
	November	56.3	53.9
	December	56.3	53.9
1975	January	57.1	NA
	February	57.3	56.1
	March	57.5	56.2
	April	58.2	57.1
	May	59.0	57.9
	June	60.3	58.8
	July	63.1	61.5
	August	63.6	62.0
	September	63.8	62.1
	October	63.4	62.1
	November	63.2	62.0
	December	62.9	61.4
1976	January	62.7	61.2
	February	62.1	60.6
	March	61.6	60.1
	April	61.6	60.4
	May	62.4	61.1
	June	63.9	62.9
	July	64.6	63.2
	August	65.2	63.9
	September	65.3	64.0
	October	65.2	64.0
	November	65.2	63.9
	December	65.0	63.9

Sources: FEA for January through December 1974;
Lundberg Survey, Inc., for January 1975 forward.

Average Selling Prices and Margins for Major and Independent Retail Dealers — December 1976

(Cents per gallon, including tax)

Regular Gasoline—Full Service

	Selling Price	Margin
Major	60.7	8.3
Independent	55.3	5.9
National Average	59.9	7.9

Regular Gasoline—Self Service

	Selling Price	Margin
Major	57.0	4.6
Independent	54.0	4.4
National Average	56.1	4.5

Premium Gasoline—Selling Prices

	Full Service	Self Service
Major	65.7	62.8
Independent	59.8	58.6
National Average	65.0	61.6

Unleaded Gasoline—Full Service Selling Prices

	Regular	Premium
Major	64.5	68.0
Independent	58.3	NA
National Average	63.9	68.0

NA=Not available.

Source: Lundberg Survey, Inc.

Average Regional Selling Prices and Dealer Margins for Regular Gasoline at Full Service Retail Outlets — December 1976

Region	Selling Price	Margin
	Cents per gallon, including tax	
1A New England	58.7	6.9
1B Mid Atlantic	60.5	7.1
1C Lower Atlantic	60.0	8.4
2 Mid Continent	59.7	7.2
3 Gulf Coast	57.4	9.4
4 Rocky Mountain	61.7	9.8
5 West Coast	62.0	8.1
National Average	59.9	7.9

Source: Lundberg Survey, Inc.

Motor Gasoline (Continued)

Retail Gasoline Price Changes for 21 Leading Refiners During December 1976
and Entitlement Position* During November 1976

Company	Effective Date of Change	Amount of Change	Entitlement Position (November)
		Cents per gallon	
Amerada Hess		None	Seller
American Petrofina		None	Buyer
Ashland	December 2	-0.25 (St. Paul Park, Minn.)	Seller
Atlantic Richfield		None	Buyer
B.P.		None	Seller
Cities Service		None	Buyer
Champlin	December 7	-0.50	Buyer
Continental	December 11	0.6 (PAD V)	Buyer
Exxon		None	Buyer
Getty		None	Buyer
Gulf		None	Buyer
Kerr-McGee		None	Buyer
Mobil		None	Buyer
Phillips		None	Seller
Shell		None	Buyer
Standard Oil of California		None	Seller
Standard Oil of Indiana		None	Buyer
Standard Oil of Ohio		None	Seller
Sun		None	Buyer
Texaco	December 7	-1.00 (wholesale and retail - Colorado) 0.80 (Metropolitan Detroit)	Buyer
Union Oil of California	December 2	-0.50 (PAD I)	Buyer

*See Definitions.
Source: FEA.

Jobber Prices for Regular Gasoline Sold by 21 Leading Refiners

		Northeast	Mid-Atlantic	Southeast	Central	Western	Southwest	Pacific	National Average
		Cents per gallon, excluding tax							
1974	January	21.4	21.4	21.1	21.3	22.2	20.1	21.0	21.2
	February	23.7	23.6	22.5	23.9	23.5	22.5	22.6	23.2
	March	25.4	25.2	24.1	25.3	24.5	24.2	25.2	24.8
	April	26.7	26.1	24.8	26.0	25.6	24.7	25.0	25.6
	May	28.5	28.4	26.8	28.2	27.7	26.3	26.3	27.5
	June	29.8	29.4	28.0	29.3	29.3	27.1	27.2	28.6
	July	29.9	29.3	28.0	29.4	28.9	27.8	28.0	28.8
	August	29.7	29.4	28.6	29.6	29.1	28.1	28.6	29.0
	September	29.3	28.9	28.0	28.8	28.7	27.4	27.8	28.4
	October	28.0	27.2	26.6	27.5	27.0	26.2	26.6	27.0
	November	27.8	27.3	26.6	27.5	27.5	26.3	27.3	27.2
	December	27.7	27.6	26.9	27.7	27.9	26.7	27.3	27.4
	AVERAGE								26.7
1975	January	27.8	27.8	27.4	28.2	28.5	27.2	27.8	27.8
	February	28.4	28.2	27.8	28.7	28.3	27.6	27.5	28.1
	March	28.9	28.8	28.4	29.1	29.0	27.8	28.0	28.6
	April	29.6	29.9	29.4	30.4	29.8	29.2	29.8	29.7
	May	30.9	31.0	30.5	31.6	31.2	30.4	31.0	30.9
	June	32.4	32.5	32.0	33.1	32.6	31.6	32.6	32.4
	July	34.4	34.6	33.9	34.9	34.5	33.4	33.7	34.2
	August	35.3	35.1	34.6	35.6	35.2	34.1	34.5	34.9
	September	35.2	35.1	34.5	35.4	35.0	34.1	34.5	34.8
	October	34.3	34.6	34.0	34.9	34.3	33.8	34.2	34.3
	November	34.1	34.3	33.9	34.6	34.3	33.6	34.0	34.1
	December	33.7	34.1	33.6	34.3	33.8	33.3	33.7	33.8
	AVERAGE								32.0
1976	January	33.3	33.9	33.2	34.0	33.2	33.1	33.5	33.5
	February	33.0	33.4	32.6	33.8	32.6	32.9	33.5	33.1
	March	32.4	33.0	31.8	33.4	32.5	32.6	33.2	32.7
	April	33.0	33.5	32.3	33.9	33.2	33.2	33.2	33.2
	May	34.4	34.9	33.6	35.3	34.8	34.8	34.7	34.6
	June	35.7	35.9	34.8	36.5	36.1	35.9	35.5	35.8
	July	36.1	36.3	35.4	36.8	36.3	36.3	36.3	36.2
	August	36.5	36.6	35.7	37.3	36.4	36.5	36.7	36.5
	September	35.8	36.1	35.3	36.9	35.9	36.6	36.5	36.2
	October	35.7	35.8	35.2	36.7	35.9	36.4	36.5	36.0
	November	34.9	35.1	34.4	36.3	35.3	36.3	36.5	35.6
	December	34.9	35.1	34.4	36.3	35.3	36.3	36.5	35.6

Source: FEA.

Diesel Fuel

Average Selling Prices and Margins for No. 2 Diesel Fuel*

(Cents per gallon, including tax)

		Selling Price		Margin	
		Truckstops	Service Stations	Truckstops	Service Stations
1974	January	NA	46.0	NA	6.7
	February	NA	45.9	NA	6.6
	March	NA	46.8	NA	7.2
	April	NA	48.3	NA	7.2
	May	NA	48.4	NA	7.2
	June	NA	49.3	NA	7.7
	July	NA	49.7	NA	7.3
	August	NA	49.9	NA	7.3
	September	NA	49.6	NA	7.4
	October	NA	49.3	NA	7.5
	November	NA	49.3	NA	7.2
	December	NA	49.2	NA	7.5
1975	January	NA	50.6	NA	6.8
	February	49.7	50.2	7.0	7.3
	March	50.1	50.2	7.5	7.4
	April	50.5	50.6	7.4	7.5
	May	50.3	51.0	7.0	7.7
	June	51.4	51.4	7.5	7.9
	July	51.2	52.4	7.3	8.2
	August	52.1	52.6	8.1	8.9
	September	52.1	52.7	7.4	8.7
	October	51.8	53.0	6.2	7.7
	November	52.0	53.0	5.3	6.5
	December	51.7	52.4	5.3	6.7
1976	January	52.0	52.5	5.6	7.2
	February	52.1	52.0	6.0	7.3
	March	51.4	52.4	5.6	7.1
	April	51.1	52.8	5.8	7.8
	May	51.4	52.9	6.9	7.8
	June	52.0	53.3	7.0	7.7
	July	52.1	53.1	6.4	7.1
	August	52.3	53.2	6.0	7.0
	September	52.2	53.1	5.7	6.8
	October	52.4	53.1	5.8	6.5
	November	52.9	53.3	6.1	6.4
	December	53.1	53.5	5.7	5.9

*See Explanatory Note 13.

Sources: FEA for January through December 1974; Lundberg Survey, Inc., for January 1975 forward.

Average Selling Prices and Margins for Major and Independent No. 2 Diesel Fuel Retail Dealers — December 1976

(Cents per gallon, including tax)

Truckstops

	Selling Price	Margin
Major	53.9	5.1
Independent	52.2	6.5
National Average	53.1	5.7

Service Stations

	Selling Price	Margin
Major	55.3	5.6
Independent	52.1	6.3
National Average	53.5	5.9

Source: Lundberg Survey, Inc.

No. 1 Diesel Fuel

		Wholesale	Retail
		Cents per gallon	
1975	July	30.1	37.7
	August	30.8	38.2
	September	31.5	36.9
	October	33.1	35.4
	November	33.3	35.0
	December	34.2	35.5
1976	January	33.8	37.1
	February	33.6	35.3
	March	33.9	34.8
	April	34.2	35.4
	May	34.5	37.5
	June	34.7	37.9
	July*	35.0	38.1
	August*	35.4	38.2
	September*	35.3	37.7
	October*	36.3	36.4

*Preliminary.

Note: Wholesale refers to the price of diesel fuel sold to other refiners and resellers, including branded jobbers, unbranded jobbers, and commercial accounts. Retail refers to the price at which company-owned and -operated retail dealers sell to consumers (excluding taxes).

Source: FEA.

Heating Oil

Residential Heating Oil Prices

		Average Selling Price*	Average Purchase Price*	Average Dealer Margin*
		Cents per gallon		
1974	January	31.1	23.4	7.7
	February	32.8	25.4	7.4
	March	33.8	25.9	7.9
	April	34.0	25.9	8.1
	May	35.1	26.8	8.3
	June	35.3	27.5	7.8
	July	35.2	28.1	7.1
	August	35.8	28.1	7.7
	September	36.3	28.7	7.6
	October	35.6	28.9	6.7
	November	37.9	29.1	8.8
	December	36.9	28.5	8.4
	AVERAGE	34.7	26.9	
1975	January	37.4	29.1	8.3
	February	37.0	28.7	8.3
	March	36.6	28.4	8.2
	April	36.1	29.3	6.8
	May	36.7	30.0	6.7
	June	37.1	30.3	6.8
	July	37.2	30.6	6.6
	August	38.0	31.2	6.8
	September	38.4	31.0	7.4
	October	39.3	31.8	7.5
	November	39.4	32.1	7.3
	December	40.1	32.4	7.7
	AVERAGE	37.7	31.2	
1976	January	40.1	32.4	7.7
	February	40.1	32.4	7.7
	March	NA	NA	NA
	April	NA	NA	NA
	May	NA	NA	NA
	June	39.3	NA	NA
	July	39.3	NA	NA
	August	39.8	NA	NA
	September	40.2	NA	NA
	October	40.7	NA	NA
	November	41.8	NA	NA

*Average selling prices, purchase prices, and dealer margins represent sales for residential heating oil only.
NA=Not available.

Source: FEA.

Residential Heating Oil Prices by Region

		New England	Mid Atlantic	Southeast	East North Central	East South Central	West North Central	West South Central	Mountain	West Coast
		Cents per gallon								
1974	January	31.9	31.6	30.8	30.3	29.8	31.3	NA	30.4	30.5
	February	33.8	33.5	32.8	30.9	32.0	32.9	NA	37.2	32.8
	March	31.9	33.7	33.9	34.2	30.6	34.5	NA	NA	NA
	April	34.3	34.8	32.5	33.5	33.7	30.1	NA	34.2	32.6
	May	34.8	35.6	36.2	34.2	34.4	32.6	NA	34.8	37.8
	June	35.9	36.2	35.8	34.9	31.1	33.6	NA	35.9	39.1
	July	35.2	35.5	35.6	34.4	30.2	34.9	NA	36.1	36.3
	August	36.3	36.1	37.8	35.1	33.7	35.2	NA	NA	35.9
	September	37.2	36.5	36.1	35.0	33.6	35.8	NA	32.3	35.1
	October	36.7	35.9	36.9	33.3	34.1	33.8	NA	35.6	36.3
	November	39.0	38.7	37.4	36.4	35.3	35.6	NA	37.3	36.4
	December	38.3	38.7	36.8	34.2	34.7	33.5	NA	35.8	33.9
1975	January	40.2	38.9	36.5	33.2	34.7	34.0	NA	37.5	38.0
	February	39.2	38.4	36.8	33.4	34.7	33.3	NA	36.6	37.7
	March	38.0	37.8	36.4	34.2	33.2	34.3	NA	NA	36.8
	April	37.4	36.8	36.8	33.2	33.7	34.5	NA	38.9	36.8
	May	37.6	36.9	36.4	35.1	34.7	35.4	NA	37.0	37.8
	June	37.7	37.7	36.4	35.8	NA	35.9	NA	37.6	37.6
	July	37.9	36.9	36.9	36.4	34.7	36.8	NA	NA	38.8
	August	38.8	38.2	37.9	36.3	35.7	36.3	NA	41.3	39.3
	September	39.4	38.7	37.6	36.5	35.7	36.8	NA	38.9	40.1
	October	40.3	39.9	38.3	37.4	36.6	37.9	NA	39.0	41.0
	November	41.0	39.6	38.7	37.9	NA	38.1	NA	40.2	41.3
	December	41.0	41.1	39.0	38.5	34.1	38.0	NA	44.8	40.9
1976	January	41.3	40.6	39.9	38.6	NA	39.0	NA	40.2	42.0
	February	41.1	41.6	39.2	38.5	37.2	38.9	NA	NA	40.8

NA=Not available.

Source: FEA.

Average Distributor Purchase Prices for Heating Oil by Region

		New England	Mid Atlantic	Southeast	East North Central	East South Central	West North Central	West South Central	Mountain	West Coast
		Cents per gallon								
1974	January	22.3	23.4	23.3	23.8	23.5	24.0	NA	22.5	23.0
	February	24.9	25.5	25.3	24.8	25.2	26.4	NA	29.7	25.3
	March	24.9	25.0	26.3	25.6	24.0	27.0	NA	NA	NA
	April	25.7	26.0	26.0	27.1	26.3	24.0	NA	26.8	26.0
	May	26.3	27.0	27.5	27.3	27.4	25.8	NA	27.1	26.2
	June	27.5	27.6	27.8	29.0	25.4	27.4	NA	27.3	28.0
	July	28.1	28.2	28.3	27.5	25.2	28.5	NA	28.2	29.1
	August	28.1	28.2	27.9	27.5	29.3	28.8	NA	NA	28.2
	September	29.2	28.9	28.5	27.8	28.2	28.4	NA	29.3	28.8
	October	29.9	29.4	28.8	27.7	28.3	27.4	NA	29.9	29.2
	November	29.8	29.7	28.8	27.8	29.1	27.6	NA	27.9	29.8
	December	29.3	29.4	28.4	27.4	28.8	26.7	NA	29.3	27.0
1975	January	30.3	29.7	28.5	27.2	28.8	27.5	NA	28.5	29.7
	February	29.6	29.3	28.6	27.2	28.8	27.3	NA	29.4	28.5
	March	29.5	29.3	29.1	28.1	26.8	28.1	NA	NA	27.6
	April	29.4	29.5	29.7	28.3	27.8	29.5	NA	29.0	28.5
	May	30.5	30.0	30.0	30.0	28.8	29.4	NA	30.9	28.7
	June	30.4	30.2	30.6	30.5	NA	30.7	NA	31.8	29.0
	July	30.7	30.1	29.9	31.6	28.8	31.4	NA	NA	30.4
	August	31.6	30.8	30.9	31.2	29.8	30.2	NA	31.6	32.8
	September	31.4	30.9	30.7	30.6	29.8	30.6	NA	31.9	31.4
	October	32.0	31.9	31.3	31.5	31.1	31.4	NA	34.4	32.5
	November	32.5	31.7	32.0	32.1	NA	32.0	NA	34.1	32.3
	December	32.9	32.7	31.8	32.0	29.4	31.4	NA	33.9	32.8
1976	January	32.5	32.5	31.9	32.3	NA	32.3	NA	33.6	32.9
	February	32.8	32.9	31.6	31.9	31.3	32.1	NA	NA	31.1

NA=Not available.

Source: FEA.

Residual Fuel Oil

RESIDUAL FUEL OIL (Dollars per barrel)

		NO. 5		NO. 6						BUNKER "C"		TOTAL	
				0.0 to 0.3 percent sulfur		0.31 to 1.0 percent sulfur		Greater than 1.0 percent sulfur		Total			
		Whole-sale	Retail	Whole-sale	Retail	Whole-sale	Retail	Whole-sale	Retail	Whole-sale	Retail	Whole-sale	Retail
1975	July	10.19	11.28	11.57	12.86	10.90	12.05	10.25	10.59	10.66	11.70	7.88	10.54
	August	10.19	11.04	11.53	13.22	10.85	12.34	9.72	10.53	10.49	11.89	8.76	10.43
	September	10.58	11.07	11.75	12.94	10.63	11.65	9.87	10.52	10.48	11.52	8.93	10.29
	October	10.15	11.12	11.50	12.98	10.37	12.09	9.75	10.38	10.30	11.69	8.88	10.31
	November	10.90	11.27	12.21	12.96	10.33	12.03	9.90	10.34	10.47	11.68	9.01	10.43
	December	10.83	11.64	11.89	12.87	10.37	11.83	9.65	10.06	10.24	11.42	9.07	10.15
1976	January	11.08	11.75	12.06	12.39	10.60	11.68	9.57	10.23	10.53	11.35	8.75	10.35
	February	10.49	11.59	12.42	12.78	10.88	11.86	9.70	10.36	10.73	11.52	8.64	10.27
	March	10.23	11.89	12.34	12.81	11.05	11.85	9.57	10.22	10.74	11.43	8.59	10.33
	April	10.30	11.58	11.49	12.34	10.93	11.77	9.53	10.29	10.38	11.43	8.79	10.12
	May	9.87	11.70	11.04	11.87	10.61	11.40	9.48	9.89	10.11	10.95	8.75	10.65
	June	9.97	11.23	11.21	12.23	10.17	11.35	9.74	10.01	10.12	11.04	8.58	10.09
	July	9.94	11.70	11.71	12.12	10.21	11.36	9.83	10.04	10.24	11.04	9.36	10.34
	August	9.71	11.48	11.67	12.27	10.41	11.45	9.57	10.19	10.20	11.18	8.94	9.98
	September	R10.32	11.11	11.64	12.50	R10.27	11.55	10.04	10.29	10.33	11.30	R9.15	10.07
	October*	10.32	11.70	11.89	12.85	11.08	12.06	10.04	10.74	10.75	11.82	9.64	10.81
													11.40

*Preliminary.

Note: Wholesale refers to the price of residual fuel sold to other refiners and resellers, including bulk plants, branded and unbranded jobbers, and other residual dealers. Retail refers to the price at which residual fuel oil is sold to ultimate consumers such as utility, industrial, institutional, commercial, and residential accounts.

R=Revised data.

Source: FEA mandatory survey of refiners and large resellers.

Aviation Fuels

AVIATION FUELS (Cents per gallon)

		Aviation Gasoline		Naphtha-Type*	Kerosene-Type		Total
		Wholesale	Retail	Retail	Wholesale	Retail	
1975	July	40.6	40.6	31.4	29.8	29.2	30.3
	August	41.3	42.1	31.0	32.1	29.5	30.4
	September	41.2	39.9	30.5	31.5	29.6	30.3
	October	41.1	41.2	30.5	31.7	30.0	30.6
	November	39.7	42.1	30.7	31.6	30.2	30.8
	December	40.9	40.9	31.0	31.9	30.5	31.1
1976	January	41.4	41.2	30.9	30.6	31.3	31.5
	February	41.2	42.0	31.2	31.1	31.2	31.5
	March	41.1	41.9	31.4	31.2	30.7	31.2
	April	41.2	42.5	30.4	31.9	30.5	30.9
	May	42.1	43.1	31.0	33.0	30.2	31.0
	June	42.6	42.3	31.3	32.1	30.3	31.1
	July	43.6	44.2	31.1	32.9	30.8	31.5
	August	43.7	44.1	31.7	32.1	31.1	31.8
	September	43.6	44.7	32.3	32.6	31.4	32.2
	October**	43.6	43.8	32.4	33.5	31.9	32.5

*Nearly all naphtha-type fuels are sold directly to the Defense Fuel Supply Center. Consequently, wholesale prices are not applicable.

**Preliminary.

Note: Wholesale refers to the price of aviation fuel sold to refiners and resellers, including bulk plants, branded and unbranded jobbers, and aviation fuel distributors. Retail refers to the price of aviation fuel sold to ultimate consumers, including commercial airline and military accounts.

R=Revised data.

Source: FEA mandatory survey of refiners and large resellers.

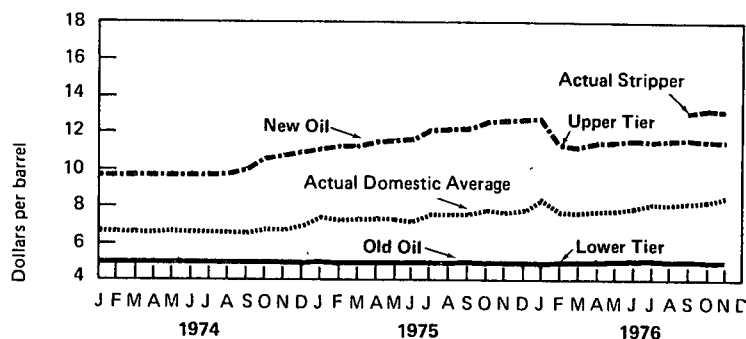
Crude Oil

Domestic Crude Petroleum Prices at the Wellhead*

		Old	New	Domestic Average			Lower Tier**	Upper Tier**			Domestic Average									
		Dollars per barrel					Dollars per barrel													
1974	January	5.03	9.82	6.95	1976	February	R5.05	11.47				7.87								
	February	5.03	9.87	6.87		March	5.07	11.39				7.79								
	March	5.03	9.88	6.77		April	5.07	11.52				7.86								
	April	5.03	9.88	6.77		May	5.13	11.55				7.89								
	May	5.03	9.88	6.87		June	5.15	11.60				7.99								
	June	5.03	9.95	6.85		July	5.19	11.59				8.04								
	July	5.03	9.95	6.80		August	5.18	11.62				8.03								
	August	5.03	9.98	6.71																
	September	5.03	10.10	6.70																
	October	5.03	10.74	6.97																
	November	5.03	10.90	6.97																
	December	5.03	11.08	7.09																
AVG.		5.03	10.13	6.87			Dollars per barrel													
1975	January	5.05	11.28	7.61	September	5.17	11.65	***	13.21		8.39					8.19				
	February	5.03	11.39	7.47	October	R5.15	11.62	***	13.35		R8.46					8.23				
	March	5.03	11.47	7.57	November	***5.17	11.62	***	13.30	***	8.62					8.40				
	April	5.03	11.64	7.55																
	May	5.03	11.69	7.52																
	June	5.03	11.73	7.49																
	July	5.03	12.30	7.75																
	August	5.03	12.38	7.73																
	September	5.04	12.46	7.75																
	October	5.03	12.73	7.83																
	November	5.03	12.89	7.80																
	December	5.03	12.95	7.93																
AVG.		5.03	12.03	7.67																
1976	January	5.02	12.99	8.63																

(Table continued in next column)

Crude Oil Wellhead Price



*See Explanatory Note 14.

See Definitions. *Preliminary figure based on early reports. †Stripper oil was exempt from price controls beginning September 1, 1976. From February through August 1976, stripper oil was subject to upper tier price ceilings. R=Revised data.

Sources: January 1974 through January 1976—FEA Crude Petroleum Production Monthly Report; February 1976 forward—FEA Domestic Crude Oil Purchasers Report.

Percentages of Domestic Production Sold at the Wellhead

		Old Oil	New Oil	Released	Stripper
1975	January *	58	19	10	12
	February *	61	17	9	12
	March	60	18	10	12
	April	61	17	9	12
	May	62	17	8	13
	June	63	16	8	13
	July	62	16	8	14
	August	63	16	7	14
	September *	63	15	7	14
	October	63	16	7	14
	November	64	15	7	14
	December	63	16	7	14
	AVERAGE	62	16	8	13
1976	January	54	21	10	15
		Lower Tier	Upper Tier		
	February	56	30	—	14
	March	57	29	—	14
	April *	57	29	—	15
	May	57	29	—	14
	June	56	29	—	15
	July	56	30	—	14
	August	56	30	—	14
		Lower Tier	Upper Tier		Stripper
	September **	53	34		13
	October **	53	35		13
	November **	50	37		13

*Totals do not add to 100 due to rounding.

**Preliminary.

Sources: January 1975 through January 1976—FEA Crude Petroleum Production Monthly Report; February 1976 forward—FEA Domestic Crude Oil Purchasers Report for Lower Tier percentages, FEA estimates for Upper Tier and Stripper percentages.

Crude Oil (Continued)

Entitlement Prices*

		Dollars
1974	November	5.00
	December	5.00
1975	January	6.00
	February	6.75
	March	7.31
	April	7.29
	May	7.39
	June	7.82
	July	8.13
	August	8.31
	September	8.31
	October	8.62
	November	8.94
	December	8.55
1976	January	8.09
	February	7.85
	March	7.89
	April	7.85
	May	7.82
	June	7.91
	July	7.80
	August	8.02
	September	7.80
	October	7.84
	November	7.90

*See Definitions.

Source: FEA

Refiner Acquisition Cost of Crude Petroleum*

		Domestic	Imported	Composite
		Dollars per barrel		
1974	January	6.72	9.59	7.46
	February	7.08	12.45	8.57
	March	7.05	12.73	8.68
	April	7.21	12.72	9.13
	May	7.26	13.02	9.44
	June	7.20	13.06	9.45
	July	7.19	12.75	9.30
	August	7.20	12.68	9.17
	September	7.18	12.53	9.13
	October	7.26	12.44	9.22
	November	7.46	12.53	9.41
	December	7.39	12.82	9.28
	AVERAGE	7.18	12.52	9.07
1975	January	7.78	12.77	9.48
	February	8.29	13.05	10.09
	March	8.38	13.28	9.91
	April	8.23	13.26	9.83
	May	8.33	13.27	9.79
	June	8.33	14.15	10.33
	July	8.37	14.03	10.57
	August	8.48	14.25	10.81
	September	8.49	14.04	10.79
	October	8.68	14.66	10.85
	November	8.67	15.04	11.05
	December	8.66	14.81	10.98
	AVERAGE	8.39	13.93	10.38
1976	January	9.14	13.27	10.76
	February	8.67	13.26	10.54
	March	8.48	13.51	10.44
	April	8.66	13.39	10.63
	May	8.62	13.41	10.66
	June	8.60	13.48	10.88
	July	8.72	13.51	10.97
	August	8.65	13.58	10.78
	September	8.95	13.47	11.08
	October	R9.13	R13.49	R11.20
	November	**9.16	**13.58	**11.26

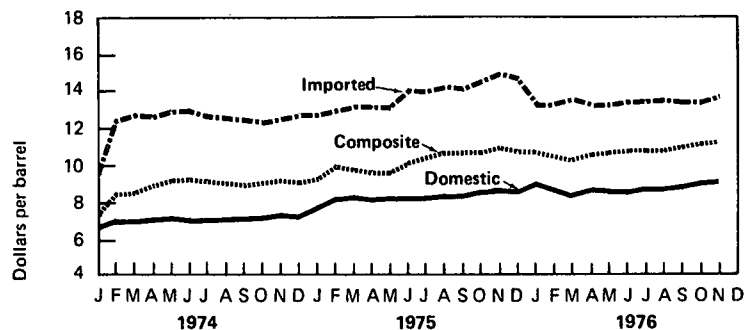
*See Explanatory Note 15.

**Preliminary data.

R=Revised data.

Source: FEA.

Crude Oil Refiner Acquisition Cost



Crude Oil (Continued)

Estimated Landed Cost of Imported Crude Petroleum From Selected Countries*

		Algeria	Canada	Indonesia	Iran	Nigeria	Saudi Arabia	U.A. Emirates	Venezuela
		Dollars per barrel							
1974	January	NA	6.70	NA	8.53	12.13	NA	NA	10.28
	February	NA	10.90	NA	12.11	12.74	NA	NA	11.31
	March	NA	11.14	12.13	13.02	13.26	NA	NA	11.78
	April	13.63	11.02	12.49	12.83	13.67	11.59	NA	11.38
	May	14.67	11.47	12.95	13.84	13.83	11.53	NA	11.28
	June	14.43	12.56	13.21	13.44	13.03	11.32	13.06	10.39
	July	13.65	12.65	13.77	13.02	12.75	11.97	12.34	10.64
	August	13.96	12.49	14.38	12.31	12.70	12.16	12.69	11.20
	September	13.83	12.51	13.42	11.87	12.28	11.45	NA	11.01
	October	13.20	12.53	14.24	12.07	12.12	11.51	12.84	10.95
	November	13.43	12.33	13.45	12.15	12.83	12.15	13.54	11.15
	December	13.08	12.15	14.15	11.63	12.88	11.75	14.59	11.37
1975	January	12.72	12.43	13.30	12.11	12.07	12.07	13.14	11.37
	February	12.11	12.15	13.52	11.86	12.18	11.94	12.67	11.56
	March	12.46	12.79	13.94	12.08	12.56	11.78	13.40	11.66
	April	12.36	12.95	13.71	12.34	12.46	12.16	12.55	11.61
	May	12.41	12.08	13.71	11.93	12.34	12.27	13.29	11.54
	June	12.37	11.90	13.73	12.51	12.49	11.93	12.48	11.51
	July	12.69	12.15	13.98	11.83	12.37	12.08	12.78	11.46
	August	12.68	12.27	13.85	12.17	12.32	12.10	12.60	11.44
	September	12.52	12.63	13.75	11.97	12.42	12.17	12.49	11.42
	October	13.45	13.02	14.00	12.27	13.18	12.64	12.85	12.08
	November	13.28	14.00	13.81	12.47	13.37	12.58	13.23	12.38
	December	13.46	13.96	13.92	13.01	13.57	12.93	13.21	12.31
1976	January	13.56	12.95	13.89	13.01	13.61	13.18	13.50	11.60
	February	13.57	13.24	13.94	12.87	13.52	13.21	13.36	12.09
	March	13.83	13.30	13.94	12.77	13.62	13.18	13.37	11.71
	April	13.73	13.61	13.78	12.91	13.60	13.11	13.18	11.95
	May	13.47	13.62	13.84	12.82	13.62	13.05	13.39	11.61
	June	13.75	14.19	13.84	13.00	13.78	13.14	13.09	11.55
	July	13.77	13.79	13.80	12.76	13.81	13.02	13.45	11.44
	August	13.91	13.78	13.78	13.09	13.87	13.03	13.23	11.77
	September	14.03	13.70	13.80	12.78	13.82	12.87	13.44	11.98
	October	13.81	13.71	13.84	12.73	13.99	12.87	13.22	11.84
	November	13.84	13.59	13.77	12.58	13.95	13.01	13.18	12.01

*See Explanatory Note 16.

Source: FEA.

Unrecouped Costs for Refined Products for 30 Largest Refiners

		Distillate *	Motor Gasoline	Aviation Jet Fuel**	Other Products	Total
		Millions of dollars				
1974	January	116	91		43	250
	February	184	87		175	446
	March	198	85		237	520
	April	223	215		346	783
	May	261	255		446	963
	June	326	394		630	1,350
	July	355	325		648	1,327
	August	392	349		665	1,405
	September	409	431		650	1,490
	October	295	424		531	1,250
	November	245	475		595	1,315
	December	209	413		492	1,114
1975	January	254	431		672	1,357
	February	300	418		790	1,508
	March	282	452		966	1,700
	April	302	485		807	1,594
	May	292	370		771	1,433
	June	284	266		785	1,334
	July	233	219		624	1,075
	August	280	344		583	1,208
	September	347	335		661	1,342
	October	338	245		673	1,255
	November	426	275		796	1,497
	December	446	211		826	1,483
1976	January	336	242	131	515	1,224
	February	279	336	145	456	1,216
	March	263	316	163	456	1,198
	April	237	398	180	524	1,339
	May	264	632	161	446	1,503
	June	—	628	135	349	1,112
	July	—	587	129	384	1,100
	August	—	679	125	352	1,156
	September	—	619	134	340	1,093
	October	—	733	151	372	1,256
	November***	—	763	168	373	1,304

*Includes No. 2 heating oil and No. 2 diesel fuel only. After May 1976, reporting of the distillate bank is no longer required due to decontrol of middle distillates.

**Prior to January 1976 refiners were not required to maintain separate banks for aviation jet fuel.

***Preliminary.

Source: FEA.

Natural Gas

Natural Gas Prices Reported by Major Interstate Pipeline Companies

		PURCHASES			SALES		
		From Domestic Producers	From Canadian and Mexican Sources	Total Purchases	To Industrial Users*	To Resellers**	Total Sales
Cents per thousand cubic feet							
1974	January	24.3	42.7	25.7	48.1	55.0	55.1
	February	25.4	43.2	26.8	49.8	56.4	56.4
	March	25.7	43.2	27.0	50.8	56.9	56.9
	April	25.8	46.4	27.4	49.3	57.6	57.4
	May	25.7	49.3	27.5	49.9	58.6	57.9
	June	26.0	47.7	27.5	50.8	59.4	58.5
	July	26.3	58.7	28.6	52.5	62.0	61.1
	August	26.1	57.5	28.4	55.2	64.4	63.5
	September	27.3	58.8	29.5	54.7	65.2	64.3
	October	27.5	58.9	29.9	56.3	64.4	64.0
	November	28.5	70.9	31.7	58.7	66.8	66.6
	December	32.6	74.5	35.8	60.3	67.2	67.4
1975	January	29.8	104.0	35.2	67.6	71.1	71.4
	February	29.5	105.8	35.2	70.1	74.1	74.4
	March	31.6	102.5	37.0	70.4	77.8	77.9
	April	32.9	102.8	38.3	71.1	82.3	81.9
	May	34.7	100.6	39.8	71.1	83.7	82.8
	June	35.3	98.3	40.2	72.2	85.2	84.0
	July	36.9	101.1	41.8	73.9	84.7	83.6
	August	35.5	141.0	43.3	73.4	85.6	84.3
	September	36.5	141.2	44.5	72.8	85.9	84.6
	October	36.1	140.1	44.3	77.2	86.1	85.6
	November	36.5	162.5	46.7	77.8	86.9	86.6
	December	35.9	161.8	46.0	81.1	79.6	80.1
1976	January	38.6	164.0	48.6	87.5	88.7	89.2
	February	39.5	165.3	49.5	87.7	92.3	92.7
	March	39.5	164.5	49.7	86.4	89.8	90.2
	April	40.6	164.3	51.2	88.6	100.2	99.7
	May	42.4	165.1	52.5	86.9	98.3	97.6
	June	43.7	166.6	53.7	89.5	98.2	98.5
	July	43.6	168.4	53.2	94.3	101.8	101.1

*Represents direct sales by pipeline companies to industrial users. Does not include sales to industrial users by resellers.

**Includes the cost of gas to the distributing utility at entrance of distribution system or point of receipt.

Source: Federal Power Commission.

Intrastate Natural Gas Prices for Selected States by Type of Contract*

	California		Kansas		Louisiana		Oklahoma		Texas	
	New Contracts	Renego- tiated or Amended	New Contracts	Renego- tiated or Amended	New Contracts	Renego- tiated or Amended	New Contracts	Renego- tiated or Amended	New Contracts	Renego- tiated or Amended
Cents per thousand cubic feet										
1975										
January	75.00	76.89	55.30	—	98.04	102.96	95.99	76.03	139.90	164.04
February	—	—	—	—	128.68	113.06	97.30	64.49	154.72	163.11
March	—	—	—	—	115.78	125.89	107.70	55.05	96.66	97.50
April	—	—	64.65	45.24	149.78	134.81	132.58	87.79	160.09	176.32
May	—	—	—	—	126.80	123.53	129.31	106.56	156.72	158.59
June	—	53.68	65.00	—	130.91	129.57	94.22	120.29	165.00	187.54
July	—	65.51	—	—	117.22	125.63	133.87	114.62	183.22	178.22
August	—	75.00	198.24	—	132.87	114.20	136.77	121.21	151.87	132.50
September	—	86.00	152.89	70.38	121.89	141.23	143.73	106.69	169.87	180.77
October	135.53	—	—	—	75.16	117.60	143.09	144.14	168.10	187.30
November	—	—	157.95	139.02	138.42	71.65	140.61	133.15	149.43	182.17
December	—	—	—	80.00	139.64	131.92	132.50	153.86	187.20	140.90
1976										
January	—	83.97	103.81	84.54	138.75	131.23	149.87	109.39	181.05	193.31
February	—	40.00	—	109.68	125.00	145.30	133.72	146.71	176.63	191.54
March	—	—	150.36	—	145.66	155.39	162.83	168.57	178.70	176.44
April	195.00	—	150.00	—	142.99	154.05	162.12	148.30	202.60	152.95
May	122.00	60.39	180.39	149.84	125.54	106.05	156.35	164.02	154.00	197.22
June	—	—	114.45	150.82	147.11	137.67	169.56	168.14	178.01	192.98

*Prices are for FPC jurisdictional natural gas companies selling more than 1 billion cubic feet per year in interstate commerce.
Source: Federal Power Commission - Summary of Intrastate Natural Gas Prices.

Average Retail Prices for Natural Gas Sold to Residential Customers for Heating Use*

		Price Cents per thousand cubic feet
1974	January	116.0
	February	118.0
	March	119.7
	April	121.0
	May	122.8
	June	123.2
	July	124.9
	August	127.2
	September	128.6
	October	130.5
	November	134.5
	December	137.4
1975	January	141.2
	February	144.7
	March	146.1
	April	150.6
	May	153.7
	June	155.7
	July	154.7
	August	155.4
	September	159.4
	October	160.6
	November	166.2
	December	170.2
1976	January	171.4
	February	175.2
	March	177.0
	April	178.4
	May	180.8
	June	183.2
	July	184.5
	August	185.8
	September	191.2
	October	193.9
	November	197.3
	December	207.2
	AVERAGE	185.5

*Prices of natural gas for residential heating use are reported to the Bureau of Labor Statistics in dollars per 100 therms. Previously, the numbers were converted to cents per thousand cubic feet using the conversion factor, 1,000 Btu per cubic foot of natural gas. Beginning with this issue, all numbers have been revised using the most current conversion factor, 1,024 Btu per cubic foot of natural gas.

Source: Bureau of Labor Statistics.

Utility Fossil Fuels

U.S. Average Delivered Prices of Coal at Utilities

		Contract	Spot
		In dollars per short ton	
1974	January	9.83	17.02
	February	10.40	20.57
	March	10.63	22.54
	April	11.28	23.70
	May	11.80	24.21
	June	11.87	25.84
	July	12.05	27.99
	August	12.50	28.87
	September	12.89	30.64
	October	13.30	30.67
	November	14.16	31.95
	December	14.20	31.05
1975	January	14.57	28.12
	February	15.71	25.93
	March	15.68	25.02
	April	15.88	24.52
	May	16.45	23.78
	June	16.40	23.36
	July	16.06	22.35
	August	16.65	22.39
	September	16.76	22.46
	October	16.72	22.52
	November	16.79	22.50
	December	16.90	22.40
1976	January	16.53	21.75
	February	17.04	21.23
	March	17.65	21.36
	April	17.76	21.43
	May	18.12	21.17
	June	18.05	20.88
	July	17.93	21.00
	August	18.19	21.35

Source: Federal Power Commission.

Utility Fossil Fuels (Continued)

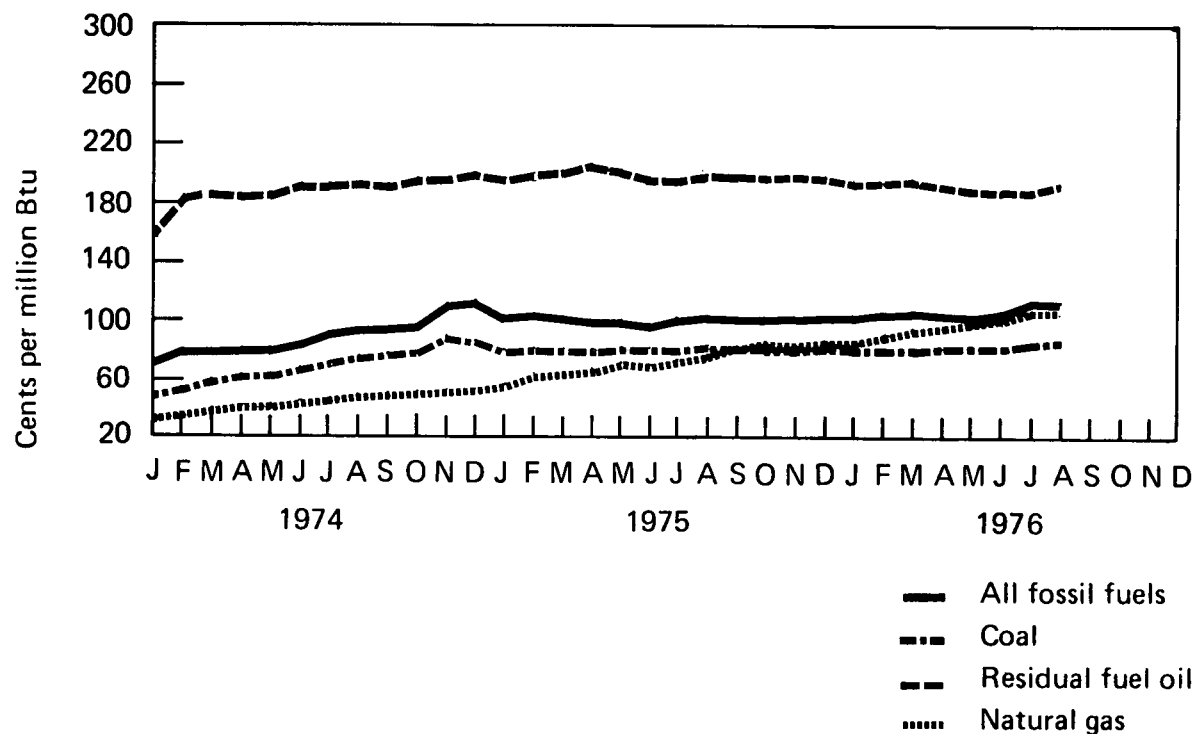
COST OF FOSSIL FUELS DELIVERED TO STEAM ELECTRIC UTILITY PLANTS

All Fossil Fuels*

Region	1975						1976						
	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG
New England	188.0	182.9	182.3	181.2	177.6	181.3	184.6	182.3	184.3	174.6	174.2	172.4	173.7
Middle Atlantic	144.5	132.7	133.7	140.8	140.8	143.6	142.2	136.8	136.9	136.6	137.9	144.5	140.2
East North Central	90.1	88.2	87.0	89.5	92.6	89.9	90.0	88.3	91.3	92.1	93.8	100.9	97.6
West North Central	62.7	63.9	62.6	62.5	65.7	72.7	67.4	67.5	67.2	68.9	69.1	70.8	75.1
South Atlantic	125.2	124.4	118.4	117.0	121.3	122.0	122.7	118.3	119.2	120.0	118.9	130.7	126.2
East South Central	84.5	85.2	83.8	84.5	85.5	88.5	88.0	87.4	90.4	90.9	90.0	93.2	94.6
West South Central	77.5	79.1	79.6	77.0	82.8	88.0	88.2	91.7	93.5	94.6	98.6	101.2	102.9
Mountain	50.4	55.0	50.1	52.3	55.6	50.4	48.3	58.4	56.1	50.1	53.0	55.4	57.9
Pacific	171.3	174.5	177.2	206.6	222.7	214.0	206.5	211.3	196.2	180.3	177.2	180.2	195.7
NATIONAL AVG.	103.8	103.7	101.2	102.4	106.9	107.3	107.6	107.8	106.4	105.8	107.0	113.2	112.9

*See Explanatory Note 17.

National Average



Coal

Cents per million Btu Region	1975					1976							
	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG
New England	127.3	120.4	128.7	127.6	120.8	124.2	122.7	119.4	124.8	127.0	122.3	127.9	127.8
Middle Atlantic	103.8	98.6	101.8	106.1	104.0	102.8	103.4	101.7	100.2	101.7	102.5	107.5	103.3
East North Central	84.3	83.4	82.1	83.8	85.7	83.1	83.1	82.7	85.0	86.8	86.6	92.4	90.9
West North Central	60.7	61.3	61.2	60.6	58.2	59.2	60.2	62.3	64.1	65.8	64.7	65.3	70.1
South Atlantic	101.4	102.4	98.6	98.5	100.1	98.3	99.2	99.7	100.8	100.8	100.7	104.4	103.5
East South Central	79.1	80.8	80.7	82.3	81.9	83.9	83.5	82.6	83.4	85.1	84.5	85.5	85.7
West South Central	24.0	24.0	24.0	24.0	24.0	26.4	26.4	26.4	26.4	26.4	27.3	32.4	36.4
Mountain	32.2	32.8	31.7	33.5	36.1	34.1	33.0	42.4	34.6	32.2	35.9	35.3	36.8
Pacific	58.8	58.9	58.4	59.5	58.9	72.7	76.0	74.5	75.5	75.7	75.2	75.8	75.7
NATIONAL AVG.	82.1	82.1	81.5	81.7	82.2	80.2	81.4	83.3	83.7	84.6	84.6	85.7	86.4

Residual Fuel Oil*

Cents per million Btu Region	1975					1976							
	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG
New England	192.6	187.9	184.1	184.8	181.0	182.5	185.4	183.5	185.7	170.0	177.8	175.4	182.8
Middle Atlantic	199.3	191.2	192.2	191.5	191.6	191.3	179.9	191.8	197.1	190.3	187.3	184.3	189.3
East North Central	191.7	205.9	189.7	211.4	192.4	197.0	193.4	200.9	198.4	202.8	211.8	214.8	222.8
West North Central	157.5	150.3	153.5	161.6	157.1	173.1	162.2	153.4	153.0	145.6	148.8	151.3	148.4
South Atlantic	183.8	181.5	180.7	179.8	173.0	174.6	177.5	178.6	179.6	171.3	171.9	174.1	176.6
East South Central	175.0	174.4	175.5	180.4	171.4	172.8	173.7	174.3	176.0	170.9	166.9	171.0	171.3
West South Central	185.2	174.4	168.4	189.2	187.9	195.3	190.7	183.0	187.4	182.0	176.4	173.3	178.6
Mountain	221.3	223.7	210.3	195.8	202.3	206.8	203.5	205.0	220.8	206.4	212.4	217.2	224.8
Pacific	258.1	257.9	255.5	261.9	259.7	246.6	240.7	240.3	232.7	229.2	229.1	228.7	228.8
NATIONAL AVG.	200.8	200.5	197.0	200.5	198.1	194.1	195.4	197.7	196.7	188.1	187.4	187.0	191.8

Natural Gas**

Cents per million Btu Region	1975					1976							
	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG
New England	154.1	137.7	135.6	133.8	157.7	166.1	166.1	151.6	134.5	144.0	153.7	154.1	153.9
Middle Atlantic	87.6	87.6	90.5	103.1	105.0	107.8	195.8	106.3	150.3	111.5	108.0	114.8	114.5
East North Central	104.6	114.0	120.2	128.3	136.8	126.8	124.4	125.0	127.7	135.3	139.8	138.2	147.8
West North Central	56.9	57.8	55.4	55.8	55.9	56.1	61.6	61.5	68.0	73.4	78.1	78.4	81.4
South Atlantic	69.7	76.4	79.6	78.5	80.8	75.1	82.0	75.5	78.2	84.0	83.1	88.7	82.9
East South Central	95.9	110.3	105.5	120.2	146.6	156.6	157.4	147.5	148.0	128.6	123.0	136.9	132.5
West South Central	75.7	77.9	79.7	77.6	80.3	83.5	87.3	90.8	92.3	94.0	98.1	100.4	101.6
Mountain	71.1	78.6	82.0	86.2	90.4	86.2	85.5	87.4	90.4	87.4	89.5	90.8	101.7
Pacific	111.1	115.2	122.4	136.9	151.1	141.2	151.6	149.5	152.6	147.3	147.6	146.6	155.3
NATIONAL AVG.	79.1	83.8	85.5	83.5	86.1	86.5	92.1	94.9	97.4	100.8	104.4	106.2	106.5

*See Explanatory Note 17.

**Includes small quantities of coke oven gas, refinery gas, and blast furnace gas.

Source: Federal Power Commission.

Petroleum Consumption

Consumption of petroleum by the 19 members of the International Energy Agency (IEA) during the first 9 months of 1976 increased 3.6 percent over the level for the comparable period in 1975. Canada showed a 2.3-percent increase, but consumption in the United Kingdom dropped 2.4 percent. During the first 10 months of 1976, two major industrial countries showed a growth in consumption, West Germany (7.9 percent) and Japan (6.2 percent). For the January through November period, France* continued to show the largest increase (8.6 percent), although the rate was a little lower than earlier in the year. Italy lowered its consumption by 1.0 percent in the first 11 months compared with the same period of 1975.

Crude Oil Production

World crude oil production continues to register new highs each month; the November figure was 60.51 million barrels per day, an increase of 720,000 barrels per day over the previous month's record. The Organization of Petroleum Exporting Countries (OPEC) produced 54.9 percent of the November total. OPEC's shut-in capacity dropped to 13.9 percent, or 5.4 million barrels per day. In the Arab OPEC sector, 19.1 percent (4.7 million barrels per day) of capacity was shut in, while in the non-Arab sector, only 5.3 percent (725,000 barrels per day) was unused.

With the addition of the 1972 figures in this issue, the magnitude of the production increase over the past 5 years is noteworthy. The current 11-month production average for 1976 of 56.64 million barrels per day is 12.0 percent greater than the average world production for 1972 of 50.55 million barrels per day. OPEC production increased from 27.07 million barrels per day in 1972 to 30.02 million in the January-November period of 1976, or 10.9 percent.

*France is not a member of IEA.

Petroleum Consumption

Petroleum Consumption for Major Free World Industrialized Countries

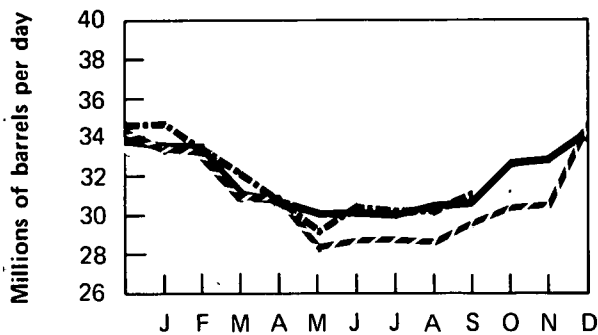
		Total IEA*	Japan**	West Germany	France***	United Kingdom	Canada	Italy†	Other IEA††
Thousands of barrels per day									
1972	AVG.	30,700	3,648	2,521	1,985	1,954	1,511	1,435	3,264
1973	AVG.	32,700	4,144	2,693	2,219	1,974	1,597	1,525	3,459
1974	Jan	33,700	4,273	2,556	2,523	2,045	1,823	1,755	3,962
	Feb	33,700	4,709	1,969	2,389	2,127	1,863	1,760	3,906
	Mar	31,200	4,508	2,173	2,249	2,133	1,659	1,579	3,044
	Apr	30,600	3,805	2,539	1,970	1,899	1,560	1,421	3,448
	May	30,000	3,718	2,403	1,915	1,704	1,577	1,349	3,523
	June	30,100	3,710	2,414	2,103	1,545	1,455	1,314	3,545
	July	30,000	3,574	2,548	1,703	1,531	1,534	1,368	3,096
	Aug	30,600	3,787	2,476	1,506	1,513	1,463	1,287	3,524
	Sept	30,700	3,868	2,473	1,996	1,663	1,415	1,527	3,730
	Oct	32,800	3,843	2,613	2,045	2,049	1,680	1,569	3,996
	Nov	33,000	4,076	2,432	2,260	2,108	1,714	1,580	3,739
	Dec	34,300	4,401	2,261	2,492	1,983	1,831	1,753	4,058
	AVG.	31,775	4,019	2,408	2,094	1,857	1,630	1,521	3,687
1975	Jan	33,600	3,850	2,183	2,190	1,981	1,691	1,792	4,120
	Feb	33,600	4,242	2,455	2,243	1,906	1,872	1,767	4,274
	Mar	31,000	3,978	2,234	1,952	1,731	1,558	1,558	3,625
	Apr	30,800	3,448	2,431	2,202	1,826	1,592	1,530	3,932
	May	28,200	3,296	2,253	1,640	1,482	1,474	1,174	3,403
	June	28,800	3,325	2,106	1,642	1,414	1,550	1,289	3,505
	July	28,900	3,437	2,319	1,491	1,322	1,537	1,234	3,289
	Aug	28,700	3,397	2,360	1,300	1,208	1,444	1,105	3,419
	Sept	29,800	3,569	2,309	1,785	1,502	1,474	1,465	3,712
	Oct	30,500	3,584	2,328	1,914	1,704	1,555	1,679	3,306
	Nov	30,600	3,940	2,361	2,074	1,723	1,577	1,448	3,830
	Dec	34,600	4,519	2,502	2,653	1,821	1,880	1,600	4,316
	AVG.	30,745	3,712	2,319	1,921	1,613	1,594	1,468	3,749
1976	Jan	34,700	R4,129	2,459	2,432	1,680	1,784	1,748	4,378
	Feb	33,400	R4,370	2,490	2,492	1,866	1,754	1,713	3,879
	Mar	32,300	R4,274	2,742	2,372	1,879	1,747	1,621	2,745
	Apr	30,900	3,806	2,332	2,117	1,661	1,518	1,409	3,583
	May	29,200	3,440	2,314	1,796	1,418	1,509	1,238	3,261
	June	30,500	R3,647	2,388	1,604	1,420	1,560	1,208	3,463
	July	30,300	R3,603	2,624	1,624	R1,346	1,531	1,247	3,336
	Aug	30,400	R3,622	2,514	1,668	R1,272	1,577	R1,273	3,500
	Sept	31,400	R3,721	2,521	1,966	1,474	1,515	1,562	3,782
	Oct	NA	3,719	2,391	R1,908	NA	NA	R1,450	NA
	Nov	NA	NA	NA	2,190	NA	NA	1,390	NA
	AVG.	31,447	3,831	2,478	2,013	1,556	1,610	1,441	3,544
	(Year to date)								

Note: All recent figures are estimates.

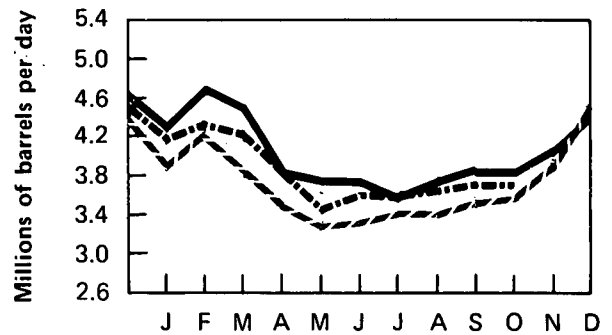
*The 19 signatory nations of the International Energy Agency (IEA) are: Austria, Belgium, Canada, Denmark, Federal Republic of Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States. Except for the United States, inland consumption excludes bunkers, refinery fuel, and losses.

Excludes liquefied petroleum gases and condensates. *Not a member of IEA. †Principal products only. ††Excludes the United States. NA=Not available. R=Revised data. Source: Central Intelligence Agency.

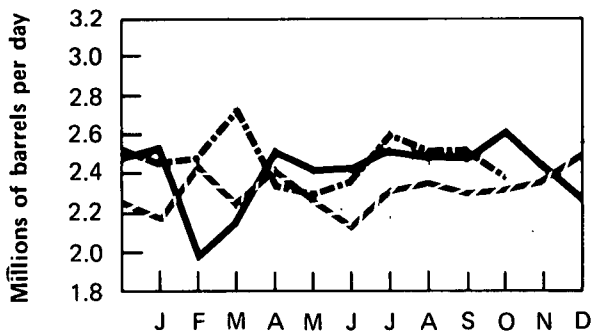
Total IEA



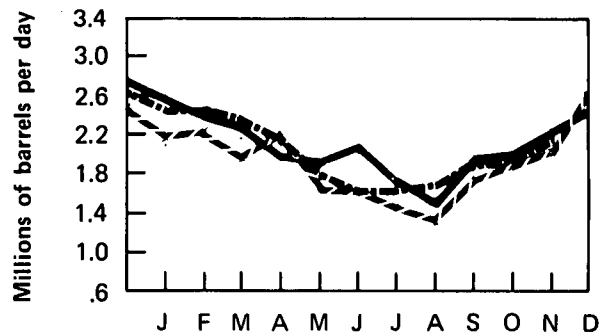
Japan*



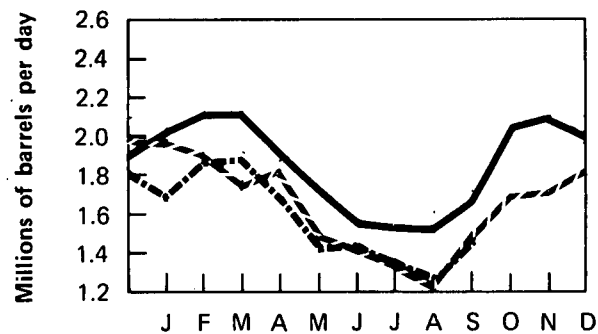
West Germany



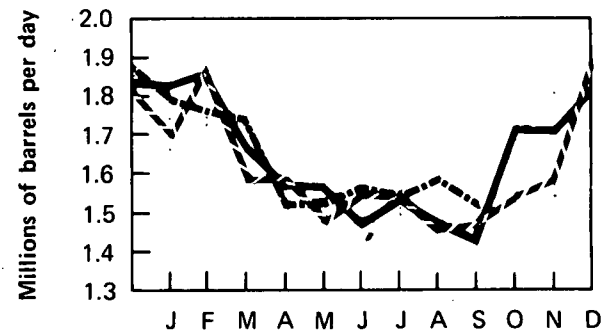
France**



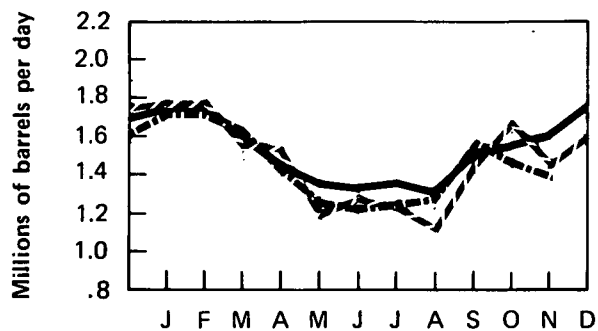
United Kingdom



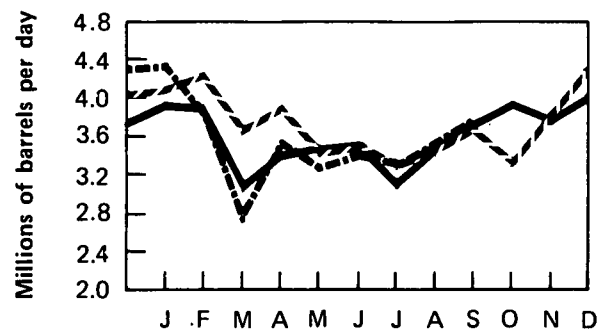
Canada



Italy***



Other IEA†



*Excludes liquefied petroleum gases and condensates.

**Not a member of IEA.

***Principal products only.

†Excludes the United States.

— 1974
- - 1975
- . - 1976

Crude Oil Production

Crude Oil Production for Major Petroleum Exporting Countries – November 1976

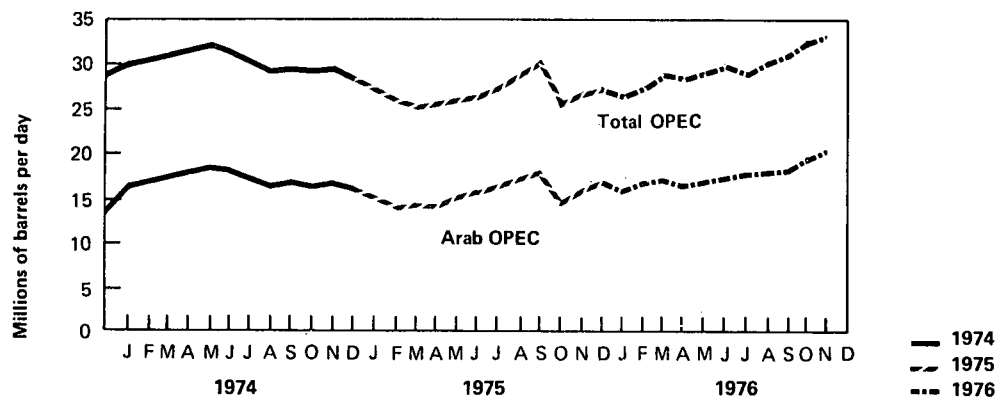
Country	Production					Production Capacity	Production Shut in
	1972 Year	1973 Year	1974 Year	1975 Year	1976 November**	November	November
	Thousands of barrels per day						Percent
Algeria	1,040	1,070	960	930	1,000	1,000	0
Iraq	1,465	2,015	1,975	2,250	2,600	3,000	13.3
Kuwait*	3,283	3,020	2,545	2,100	2,700	3,500	22.9
Libya	2,239	2,175	1,520	1,520	2,000	2,500	20.0
Qatar	482	570	520	440	480	700	31.4
Saudi Arabia*	6,016	7,600	8,480	7,080	9,400	11,800	20.3
United Arab Emirates	1,202	1,530	1,680	1,700	1,960	2,380	17.6
Subtotal: Arab OPEC	15,727	17,980	17,680	16,020	20,140	24,880	19.1
Ecuador	78	210	175	160	210	225	6.7
Gabon	125	150	200	220	220	250	12.0
Indonesia	1,080	1,340	1,375	1,310	1,500	1,700	11.8
Iran	5,023	5,860	6,020	5,350	6,680	6,700	.3
Nigeria	1,815	2,055	2,255	1,790	2,180	2,300	5.2
Venezuela	3,219	3,365	2,975	2,350	2,260	2,600	13.1
Subtotal: Non-Arab OPEC	11,340	12,980	13,000	11,180	13,050	13,775	5.3
Total: OPEC	27,067	30,960	30,680	27,200	33,190	38,555	13.9
Canada	1,540	1,800	1,695	1,470	1,346	1,800	25.2
Mexico	440	465	580	720	900	1,000	10.0
Total: OPEC, Canada Mexico	29,047	33,225	32,955	29,390	35,436	41,355	14.0
Total World	50,550	55,740	55,885	53,160	60,510		

*Includes about one-half of the former Kuwait-Saudi Arabia Neutral Zone. Production in November 1976 amounted to approximately 580,000 barrels per day.

** Estimate.

Source: Central Intelligence Agency and National Energy Board of Canada.

OPEC Countries Crude Oil Production



Definitions

Base Production Control Level

1. Prior to February 1, 1976: the total number of barrels of domestic crude oil produced and sold from a particular property in the same month of 1972. If domestic crude oil was not produced and sold from that property in every month of 1972, the total number of barrels of domestic crude oil produced and sold from that property in 1972, divided by 12.

2. Effective February 1, 1976: the total number of barrels of old crude oil produced and sold from the property during calendar year 1975, divided by 365, and multiplied by the number of days in the particular month during 1975. A producer may elect to use the total number of barrels of crude oil produced and sold from the property during calendar year 1972, divided by 366, and multiplied by the number of days in the particular month during 1972.

Branded Independent Marketer

A firm which is engaged in the marketing or distribution of refined petroleum products pursuant to (1) an agreement or contract with a refiner (or a firm which controls, is controlled by, or is under common control with such refiner) to use a trademark, trade name, service mark, or other identifying symbol or name owned by such refiner (or any such firm), or (2) an agreement or contract under which any such firm engaged in the marketing or distribution of refined petroleum products is granted authority to occupy premises owned, leased, or in any way controlled by a refiner (or firm which controls, is controlled by, or is under common control with such refiner), but which is not affiliated with, controlled by, or under common control with any refiner (other than by means of a supply contract, or an agreement or contract described in parts (1) or (2) of this definition), and which does not control such refiner.

Ceiling Price

The maximum permissible selling price, prior to February 1, 1976, for a particular grade of domestic crude oil in a particular field is the May 15, 1973, posted price plus \$1.35 per barrel.

Controlled Crude Oil

Crude oil that was domestically produced prior to February 1, 1976, subject to the ceiling price for crude oil. For a particular property which is not a stripper well lease, the volume of controlled oil equals the base production control level minus an amount of released oil equal to the new oil production from that property.

Crude Oil Domestic Production

The volume of crude oil flowing out of the ground. Domestic production is measured at the wellhead and includes lease condensate, which is a natural gas liquid recovered from lease separators or field facilities.

Crude Oil Imports

The monthly volume of crude oil imported which is reported by receiving refineries, including crude oil entering the U.S. through pipelines from Canada.

Crude Oil Input to Refineries

Total crude oil used as input for the refining process, less crude oil lost or used for refinery fuel.

Crude Oil Stocks

Stocks held at refineries and at pipeline terminals.

Cumulative Deficiency

A measure of the cumulative deficit of production below the base production control level after the first month in which new oil was produced and sold from a specific property.

Dealer Tankwagon (DTW) Price

The price at which a dealer purchases gasoline from a distributor or a jobber.

Distillate Fuel Oil

The lighter fuel oils distilled off during the refining process. Included are products known as ASTM grades Nos. 1 and 2 heating oils, diesel fuels, and No. 4 fuel oil. The major uses of distillate fuel oils include heating, fuel for on- and off-highway diesel engines, and railroad diesel fuel. Minor quantities of distillate fuel oils produced and/or held as stocks at natural gas processing plants are not included in this series.

Domestic Demand for Refined Petroleum Products

A calculated value, computed as domestic production plus net imports (imports less exports), less the net increase in primary stocks. It, therefore, represents the total disappearance of refined products from primary supplies.

Electricity Production

Production at electric utilities only. Does not include industrial electricity generation.

Entitlement Position

The monthly entitlement position of a refiner indicates whether he bought or sold entitlements in that month.

An entitlement is the right to process "deemed old oil," which is the sum of a refiner's receipts of "old" oil and a fraction of his receipts of "upper tier" crude oil. This fraction is set monthly by FEA. A refiner must purchase entitlements for the amount of his "deemed old oil" receipts in excess of the national domestic crude oil supply ratio (NDCOSR). The NDCOSR, as calculated by FEA, reflects the differences in costs to refiners of "old" oil, "upper tier" crude oil, and imported crude oil.

Entitlement Price

The price of an entitlement, fixed by FEA, is the exact differential as reported for the month between the weighted average cost per barrel to refiners of "old" oil and of imported crude oil, less 21 cents, such cost to be equivalent to the delivered cost to the refinery.

Firm Natural Gas Service

High priority gas service in which the pipeline company is under contract to deliver a specified volume of gas to the customer on a non-interruptible basis. Residential and small commercial facilities usually fall into this category.

Interruptible Natural Gas Service

Low priority gas service in which the pipeline company has the contractual option to temporarily terminate deliveries to customers by reason of claim of firm service customers or higher priority users. Large commercial facilities, industrial users, and electric utilities usually fall into this category.

Jet Fuel

Includes both naphtha-type and kerosene-type fuels meeting standards for use in aircraft turbine engines. Although most jet fuel is used in aircraft, some is used for other purposes, such as for generating electricity in gas turbines.

Jobber

A petroleum distributor who purchases refined product from a refiner or terminal operator for the purpose of reselling to retail outlets and commercial accounts or for the purpose of retailing through his own retail outlets.

Jobber Margin

The difference between the price at which a jobber purchases refined product from a refiner or terminal operator and the price at which the jobber sells to retail outlets. This does not reflect margins obtained by jobbers through retail sales or commercial accounts.

Jobber Price

The price at which a petroleum jobber purchases refined product from a refiner or terminal operator.

Landed Cost

The cost of imported crude oil equal to actual cost of crude at point of origin plus transportation cost to the United States.

Limited Work Authorization

A Limited Work Authorization (LWA) may be granted by the Atomic Safety and Licensing Board of the Nuclear Regulatory Commission to an applicant who wants to construct a nuclear powerplant providing that the project has been cleared for all requirements of the National Environmental Protection Act and that the geologic and topographic suitability of the reactor site has been found satisfactory. The LWA allows an applicant to proceed with site excavation, install temporary construction and service facilities, construct service roads, and erect structures and components not subject to normal quality assurance inspections. It may save a utility from 6 to 8 months in total construction time. However, because the ultimate approval of a construction permit is based on all evidence revealed during the licensing hearings, the successful award of an LWA is no guarantee that a construction permit will also be granted.

Line Miles of Seismic Exploration

The distance along the earth's surface that is covered by seismic traverses.

Lower Tier Crude Oil

Old crude oil.

Lower Tier Ceiling Price Determination

The lower tier ceiling price for a particular grade of domestic crude oil in a particular field is the sum of (1) the highest posted price at 6 a.m., local time, May 15, 1973, for transactions in that grade of crude oil in that field; or if there was no posted price in that field for that grade of domestic crude oil, the related price for that grade of domestic crude oil which is most similar in kind and quality in the nearest field for which prices were posted; and (2) \$1.35 per barrel.

Major Brand

Lundberg Survey, Inc., defines major brand as an integrated company that produces, refines, transports, and markets in Interstate Commerce under its own brand(s) in 20 or more States.

Motor Gasoline Production

Total production of motor gasoline by refineries, measured at refinery outlet. Relatively small quantities of motor gasoline are produced at natural gas processing plants, but these quantities are not included.

Motor Gasoline Stocks

Primary motor gasoline stocks held by gasoline producers. Stocks at natural gas processing plants are not included.

Natural Gas Liquids (NGL)

Products obtained from natural gasoline plants, cycling plants, and fractionators after processing the natural gas. Included are ethane, liquefied petroleum (LP) gases (propane, butane, and propane-butane mixtures), natural gasoline, plant condensate, and minor quantities of finished products such as gasoline, special naphthas, jet fuel, kerosene, and distillate fuel oil.

New Crude Oil

1. Prior to February 1, 1976: the total number of barrels of domestic crude oil produced and sold in a specific month, less the base production control for that month and less the current cumulative deficiency.
2. Effective February 1, 1976: the total number of barrels of domestic crude oil produced and sold in a specific month, less the property's base production control level for that month and less the current cumulative deficiency since February 1, 1976.

Nonbranded Independent Marketer

A firm which is engaged in the marketing or distribution of refined petroleum products, but which (1) is not a refiner, (2) is not a firm which controls, is controlled by, is under common control with, or is affiliated with a refiner (other than by means of a supply contract), and (3) is not a branded independent marketer.

Old Crude Oil

1. Prior to February 1, 1976: the total number of barrels of crude oil produced and sold from a property in a specific month, less the total number of barrels of new crude oil for that property in that month and less the total number of barrels of released crude oil for that property in that month.
2. Effective February 1, 1976: the total number of barrels of crude oil produced and sold from a property in a specific month, less the total number of barrels of new crude oil for that property in that month.

Power Ascension Nuclear Powerplant

A nuclear powerplant that has been licensed by the Nuclear Regulatory Commission to operate, but which is in the initial testing phase during which production of electricity may not be continuous. In general, when the electric utility is satisfied with the plant's performance, it formally accepts the plant from the manufacturer, and

places it in "commercial operation" status. A request is then submitted to the appropriate utility rate commission to include the powerplant in the rate base calculation.

Primary Stocks of Refined Petroleum Products

Stocks held at refineries, bulk terminals, and pipelines. They do not include stocks held in secondary storage facilities, such as those held by jobbers, dealers, independent marketers, and consumers.

Property

Prior to August 26, 1976, a property was defined as the right to produce domestic crude oil, which arises from a lease or from a fee interest. This definition was interpreted to apply only to a surface lease. In August 1976 the definition of a property was changed so that a producer may treat as a separate property each separate and distinct producing reservoir subject to the same right to produce crude oil, provided that such reservoir is recognized by the appropriate governmental regulatory authority as a producing formation that is separate and distinct from, and not in communication with, any other producing formation. Although this new definition was not implemented until August 26, 1976, it was made effective retroactively to February 1, 1976. (F.R. 36171, August 26, 1976)

Recompletion Well

A well that is reentered and completed in a different reservoir or producing zone than the initial completion zone.

Refined Petroleum Products Imports

Imports (into the 50 States and the District of Columbia) of motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, liquefied petroleum gases, petrochemical feedstocks, special naphtha, lubricants, waxes, asphalt, natural gas, plant condensate, and unfinished oils. Included are imports of fuels into bonded storage and receipts from U.S. territories.

Refiner Acquisition Cost

The cost to the refiner, including transportation and fees, of crude petroleum. The composite cost is the average of domestic and imported crude costs and represents the amount of crude cost which refiners may pass on to their customers.

Released Crude Oil

An amount of crude oil produced from a property in a particular month prior to February 1, 1976, which is

equal to the total number of barrels of new crude oil produced and sold from that property in that month. The amount of released crude oil for a property in a particular month shall not exceed the base production control level for that property in that month.

Residual Fuel Oil

The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery operations. Included are products known as ASTM grades Nos. 5 and 6 oil, heavy diesel oil, Navy Special Oil, Bunker C oil, and acid sludge and pitch used as refinery fuels. Residual fuel oil is used for the production of electric power, for heating, and for various industrial purposes.

Rotary Rig

Machine used for drilling wells that employs a rotating tube attached to a bit for boring holes through rock.

Separative Work Unit (SWU)

The measure of work required to produce enriched uranium from natural uranium. Enrichment plants separate natural uranium feed material into two groups, an enriched product group with a higher percentage of U-235 than the feed material and a depleted tails group with a lower percentage of U-235 than the feed material. To produce 1 kilogram of enriched uranium containing 2.8 percent U-235, and a depleted tails assay containing 0.3 percent U-235, it requires 6 kilograms of natural uranium feed and 3 kilograms of separative work units (3 SWU).

Stripper Well Property

A property whose average daily production of crude oil per well (excluding condensate recovered in nonassociated production) did not exceed 10 barrels per day during any preceding consecutive 12-month period beginning after December 31, 1972.

Synthetic Natural Gas (SNG)

A product resulting from the manufacture, conversion, or reforming of petroleum hydrocarbons which may be easily substituted for or interchanged with pipeline quality natural gas.

Uncontrolled Crude Oil

That portion of domestic crude oil production including new, released, and stripper oil which, before February 1, 1976, could be sold at a price exceeding the ceiling price.

Unrecouped Costs

Costs which have not been recovered in the current month's product prices but which have been "banked" for later use.

Upper Tier Crude Oil

Effective February 1, 1976, upper tier crude oil included new crude oil and crude oil produced from a stripper well lease. Effective September 1, 1976, upper tier crude oil includes new crude oil only.

Upper Tier Ceiling Price Determination

The upper tier ceiling price for a particular grade of domestic crude oil in a particular field is (1) the highest posted price on September 30, 1975, for transactions in that grade of crude oil in that field in September 1975, or if there was no posted price in that field for that grade of domestic crude oil, the related price for that grade of domestic crude oil which is most similar in kind and quality in the nearest field for which prices were posted; less (2) \$1.32 per barrel.

Well

Hole drilled for the purpose of finding or producing crude oil or natural gas or providing services related to the production of crude oil or natural gas. Wells are classified as oil wells, gas wells, dry holes, stratigraphic tests, or service wells. This is a standard definition of the American Petroleum Institute.

Explanatory Notes

1. Domestic production of energy includes production of crude oil and lease condensate, natural gas (wet), and coal (anthracite, bituminous, and lignite), as well as electricity output from hydroelectric and nuclear powerplants and industrial hydroelectric power production. The volumetric data were converted to approximate heat contents (Btu-values) of the various energy sources using conversion factors listed in the Units of Measure.

2. U.S. imports of fossil fuels include imports of crude oil, refined petroleum products, and natural gas (dry).

3. Domestic consumption of energy includes domestic demand for refined petroleum products, consumption of coal (anthracite, bituminous, and lignite) and natural gas (dry), electricity output from hydroelectric and nuclear powerplants, industrial hydroelectric power production, and net imports of electric power. Approximate heat contents (Btu-values) were derived using conversion factors listed in the Units of Measure. Electricity imports were converted using the Btu-content of hydroelectric power. 1975 and 1976 electricity imports were estimated on the basis of imports levels during 1974.

4. Distillate oil heating degree-days relate demand for distillate heating fuel to outdoor air temperature. Heating degree-days are defined as deviations of the mean daily temperature at a sampling station below a base temperature equal to 65° F by convention. Numerous studies have shown that when the outside temperature is 65°, most buildings can maintain an indoor air temperature of 70° without the use of heating fuels.

Mean daily temperature information is forwarded to the National Oceanic and Atmospheric Administration, Department of Commerce, from approximately 200 weather stations around the country. These data are used to calculate statewide heating degree-day averages based on population. The population-weighted State figures are aggregated into Petroleum Administration for Defense. Districts and the national average, using a weighting scheme based on each State's consumption of distillate fuel oil per degree-day (1974 data base).

5. Domestic demand figures for natural gas liquids (NGL) as reported by BOM and reproduced in this publication do not include amounts utilized by refineries for blending purposes in the production of finished products, principally gasoline. Use of NGL at refineries is reported in a separate column. The production series cited in this publication shows both NGL produced at

processing plants and liquefied gases produced at refineries. NGL produced at refineries is extracted from crude oil and hence, to avoid double counting, should not be included in calculations of total U.S. production of petroleum liquids. The NGL stock series shown in this volume includes liquids held as stocks at both natural gas processing plants and at refineries.

6. The petroleum short-term demand forecasting model uses historical consumption data to construct a regression equation for each of eight major petroleum products. Each equation attempts to capture the relationship between final demand for that product and the factors influencing that demand. The explanatory factors used in predicting product demand include (1) macroeconomic variables such as personal income and the Federal Reserve Board Index of Manufacturing, (2) real product prices, (3) variables representing the effects of weather and other seasonal variations in demand, and (4) other factors relevant to a particular product.

The assumptions underlying the current short-term forecast are:

1. Normal weather.
2. Real GNP growth rate of 3.9 and 4.6 percent for 1977 and 1978, respectively.
3. Implementation of the Energy Policy and Conservation Act and the Energy Conservation and Production Act; specifically, the composite price of domestic crude oil is set at \$7.66 per barrel beginning February 1976. This price ceiling is permitted to rise at 10 percent per year. Furthermore, stripper oil and tertiary oil is not controlled.
4. The price of imported oil is assumed to be \$13.40, \$13.98, and \$14.73 for the years 1976, 1977, and 1978, respectively.

The short-term projections are periodically revised to incorporate observed weather conditions and actual values of macroeconomic and other explanatory variables as they become available. This "revised forecast" is termed the "backcast." On page 55 in this issue of the *Monthly Energy Review*, the backcast is solved for December 1975.

The supply model includes an assumed level of domestic crude oil and NGL production and inventory changes. Imports are determined as the incremental supply required to meet total demand for refined products not satisfied by domestic production or inventory drawdown.

7. Domestic consumption of natural gas includes the quantities sold to consumers plus the gas used for plant

and pipeline fuel, after the natural gas liquids have been extracted. All monthly consumption data are estimated. Marketed production of natural gas includes gross withdrawals from the ground less the quantities used for repressuring and the amount vented and flared, before the natural gas liquids have been extracted.

8. The Federal Energy Administration and Federal Power Commission began the coordinated collection and compilation of monthly underground storage information from all underground storage operators in the United States in October 1975. Initial storage information reported was for the month of September 1975. Comparable monthly information for total U.S. storage operations is not available for prior periods.

The total gas in storage is the total volume of gas (base gas plus working gas) in storage reservoirs as of the end of the month. Base gas is the volume of gas, including all native gas in place at the time of conversion to storage, needed as a permanent inventory to maintain adequate reservoir pressures and deliverability rates throughout the withdrawal season. Base gas includes the volumes which will not be recoverable upon termination of storage operations. Working gas is the volume of gas above the designated base gas level available for withdrawal.

9. Bituminous coal and lignite consumption as reported by the Bureau of Mines are derived from information provided by the Federal Power Commission, Department of Commerce, and reports from selected manufacturing industries and retailers. Domestic consumption data in this series, therefore, approximate actual consumption. This is in contrast to domestic demand reported for petroleum products, which is a calculated value representing total disappearance from primary supplies.

Bituminous coal and lignite production is calculated from the number of railroad cars loaded at mines, based on the assumption that approximately 60 percent of the coal produced is transported by rail. Production data are estimated by the Bureau of Mines from Association of American Railroads reports of carloadings.

10. Quantities of uranium are measured by various units at different stages in the fuel cycle. At the mill, quantities are usually expressed as pounds or short tons of U_3O_8 . After the conversion stage, the units of measure are either metric tons (MT) of UF_6 or metric tons of uranium (MTU). The latter designation expresses only the elemental uranium content of UF_6 .

Following the enrichment stage, the same units are used, but the U-235 content has been enhanced at the expense of loss of material. At the fabrication stage, UF_6 is changed to UO_2 , and the standard unit of measure is the MTU. We have chosen to present all uranium quantities as MTU; conversion factors to other units are given in the section on Units of Measure.

11. The units used to describe power generation at nuclear plants are all based on the watt, which is a unit of power. (Power is energy produced per unit of time.) As with fossil-fueled plants, nuclear plants have three design power ratings. The thermal rating (expressed in thermal megawatts) is the rate of heat production by the reactor core. The gross electrical rating (expressed in electrical megawatts, MWe) is the generator capacity at the stated thermal rating of the plant. The net electrical rating (also expressed in MWe) is the power available as input to the electrical grid after subtracting the power needed to operate the plant. (A typical nuclear plant needs 5 percent of its generated electricity for its own operation.)

The electrical energy produced by a plant is expressed either as megawatt hours (MWh) or kilowatt hours (KWh). Tables in the nuclear section show generated electricity as average electrical power. This enables a more direct comparison to design capacity and to previous months' performances. To obtain the quantity of electricity generated during a given time period (in megawatt hours), multiply the average power level (in megawatts) by the number of hours during that period.

The energy extracted from uranium fuel is expressed as thermal megawatt days per metric ton of uranium (MWD/MTU). The production of plutonium in the fuel rods is expressed as kilograms of plutonium per metric ton of discharged uranium (kg/MTU).

12. The Residential and Commercial Sector consists of housing units, non-manufacturing business establishments (e.g., wholesale and retail businesses), health and educational institutions, and government office buildings. The Industrial Sector is made up of construction, manufacturing, agriculture, and mining establishments.

The Transportation Sector consists of both private and public passenger and freight transportation, as well as government transportation, including military operations. The Electric Utilities Sector is made up of privately- and publicly-owned establishments which generate electricity primarily for resale.

13. Prior to January 1975, diesel fuel prices were obtained from retail gasoline dealers that also sold diesel fuel. Beginning in January 1975, the diesel fuel survey

was expanded to include selected truck stops plus additional retail gasoline dealers that sold diesel fuel. Selling price estimates are based on a survey of 31 cities. Margins are based on a survey of 10 cities.

14. Prior to February 1976, the domestic crude petroleum wellhead price represented an estimate of the average of posted prices; after February 1976, the wellhead price represents an average of first sale prices. For the 2-year period January 1974 through January 1976, the old oil price at the wellhead was originally estimated to be \$5.25 per barrel based on representative postings. This estimate was revised in July 1976 after a survey of crude oil purchasers was implemented and more complete data became available. Estimates of the average old oil price given in the table for months prior to February 1976 are based on prices for old oil reported on new oil leases, and were not derived from a statistically valid sample of old oil leases.

15. The refiner acquisition cost of domestic crude petroleum is the price paid by refiners for domestic crude petroleum, unfinished oils, and natural gas liquids and includes transportation costs from the wellhead to the refinery. The refiner acquisition cost of imported crude petroleum is the average landed cost of imported crude petroleum to the refiner and represents the amount which may be passed on to the consumer. It incorporates transportation costs and fees (including the supplemental import fees) and any other costs incurred in purchasing and shipping crude oil to the United States.

16. The estimated landed cost of imported crude petroleum from selected countries does not represent the total cost of all imported crude. Prior to March 1975, imported crude costs to U.S. company-owned refineries in the Caribbean were not included in the landed cost, and costs of crude petroleum from countries which export only small amounts to the United States were also excluded. Beginning in March 1975, however, coverage was expanded to include U.S. company-owned refineries in the Caribbean. Landed costs do not include supplemental fees.

17. The weighted average utility fuel cost for the total United States includes distillate fuel oil delivered to utilities whereas the regional breakdown for residual fuel oil prices represents only No. 6 fuel oil prices.

Units of Measure

Weight

1 metric ton	<i>contains</i>	1.102 short tons
1 long ton	<i>contains</i>	1.120 short tons

Conversion Factors for Crude Oil

Average gravity

1 barrel	<i>contains</i>	42 gallons
1 barrel	<i>weighs</i>	0.136 metric tons (0.150 short tons)
1 metric ton	<i>contains</i>	7.33 barrels
1 short ton	<i>contains</i>	6.65 barrels

Conversion Factors for Uranium

1 short ton (U_3O_8)	<i>contains</i>	0.769 metric tons of uranium
1 short ton (UF_6)	<i>contains</i>	0.613 metric tons of uranium
1 metric ton (UF_6)	<i>contains</i>	0.676 metric tons of uranium

Approximate Heat Content of Various Fuels

Petroleum

Crude Oil	5.800 million Btu/barrel
Refined products	
Imports, average	6.000 million Btu/barrel
Consumption, average	5.5061 million Btu/barrel
Gasoline	5.248 million Btu/barrel
Jet Fuel, average	5.600 million Btu/barrel
Naphtha-type	5.355 million Btu/barrel
Kerosene-type	5.670 million Btu/barrel
Distillate fuel oil	5.825 million Btu/barrel
Residual fuel oil	6.287 million Btu/barrel

Natural gas liquids 4.024 million Btu/barrel

Natural gas

Wet	1,097 Btu/cubic foot
Dry	1,024 Btu/cubic foot

Coal

Bituminous and lignite	
Production	23.73 million Btu/short ton
Consumption	23.07 million Btu/short ton
Anthracite	25.40 million Btu/short ton

Electricity Conversion Heat Rates

Fossil fuel steam-electric

Coal	10,176 Btu/kilowatt hour
Gas	10,733 Btu/kilowatt hour
Oil	10,826 Btu/kilowatt hour

Nuclear steam-electric 10,660 Btu/kilowatt hour

Hydroelectric 10,389 Btu/kilowatt hour

Electricity Consumption 3,412 Btu/kilowatt hour

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FEA/B-77/058